

Co-Design in the Classroom:

Students as Knowledge Carriers and Co-Creators

Impact Report
September 2026





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About the Project

Co-Design in the Classroom was an undergraduate architecture design studio course (ARCH 393), designed and taught by Professor Linda Zhang in Fall 2024 at the University of Waterloo School of Architecture. This course implemented Participatory Action Research (PAR) through two co-design components: 1) students co-designed community storytelling sessions with members of Toronto's Chinatown; 2) students co-designed course curriculum and workshops alongside their peers and the instructor. Through participatory and collaborative learning activities, this course positioned students not only as co-designers of architectural projects, but also as co-creators of knowledge within architectural education. The project demonstrated the effectiveness of PAR in reshaping classroom dynamics, promoting active learning, and long-term potential for student agency and empowerment.

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Context

Architecture as a profession has evolved significantly over time, yet architectural education remains largely unchallenged. It continues to resemble the centuries-old top-down teaching model, reinforcing a hierarchical power structure, and positioning students as passive recipients of knowledge.

Early architectural education emerged in the Middle Ages through the master-apprentice relationship. Aspiring young men acquired practical knowledge on-site or in workshops with skilled masters.¹ This model was formalized in the 19th-century through the Beaux-Arts tradition. It introduced two teaching components that are still employed today: lectures and “ateliers” (design studios). In this framework, students received guidance from experienced “patron” masters who also acted as jurors to assess student work.² This master-apprentice model and the “sage on the stage” method have since persisted in contemporary architectural education.

Today, the design studio is still the central component of the architectural curriculum. In a typical studio, students learn through working on hypothetical projects individually or in groups, responding to design problems defined by instructors. Learning is evaluated through drawings, models, deliverables, and presentations,

measured against predetermined criteria. Throughout the semester, students participate in desk critiques, pin-ups, and reviews, where experienced architects and instructors provide feedback. Especially, desk crits (one-on-one critiquing sessions between students and instructors) are often celebrated as the most effective teaching tool.³ However, these sessions are not two-way discussions: instructors act as the source of expertise, and impart their knowledge to shape students’ behaviour, values, and design thinking.⁴ Rooted in individual mastery and autonomy, contemporary architectural education still remains deeply hierarchical, leading to passive student learning.

Within this context, co-design and Participatory Action Research (PAR) offer promising methodologies to dis- and re-orient the dominant structure. Both approaches support mutual learning and reverse the traditional roles of researchers and participants, designers and users.⁵ While they have been largely explored within community contexts, they remain understudied in pedagogical environments.⁶ This project responds to this gap by investigating the following research questions:

1. How can classroom dynamics be transformed through co-design?

2. How can knowledge location be redistributed through co-design?

3. How can student knowledge ownership be fostered and sustained (in the course AND) beyond the duration of the course?

By addressing these questions, this project seeks to provide an evidence-based pedagogical framework for more inclusive and empowered learning environments that can be adapted across disciplines.



Figure 1. Typical crits/reviews in architecture studio. (Photography: Fred Hunsberger)



Figure 2. Typical lectures in architecture studio. (Photography: Linda Zhang)

Methodology

This project adopts Participatory Action Research (PAR), implemented with co-design principles, as the methodological and pedagogical foundation to empower students as co-creators of knowledge. Co-design refers to an approach that involves participation in the creation process.⁷ It is guided by a set of principles, emphasizing the inclusive, collaborative, adaptive, and outcome-focused nature of the design process. PAR is a research methodology that prioritizes the active involvement of people with lived experiences as co-researchers to generate new knowledge and act on findings to improve their lives.⁸ It radically challenges conventional assumptions about who carries knowledge and where knowledge is located.

This project draws insights from the Community-Engaged Teaching and Learning (CETL) model to translate PAR and co-design principles into actionable items. CETL is measured against Arnstein's Ladder of Citizen Participation to provide educators with tiered teaching instructions.⁹ Arnstein's ladder represents the different levels of participation in eight rungs. The higher up the steps, the higher degree of participation.¹⁰ Adapting to teaching and learning, the upper the steps, the more power students possess. Existing architectural education operates on the level of "tokenism", where students are

informed and consulted but retain limited influence over their learning. In contrast, higher level of participation "citizen power", requires teaching to focus on "partnership" and "delegated power", where students are directly involved in all decision-making processes, and hold the resources and responsibilities for implementation.

Within this project, PAR was able to position students as co-researchers and, at times, co-teachers to achieve higher levels of participation. This included collaborative course co-design activities such as identifying learning objectives, designing course materials and deliverables, modifying evaluation criteria, and facilitating and leading group discussions. Rather than handing project briefs directly to students from the authoritarian position of instructors, this ongoing pedagogical process invited students to be active contributors in the teaching and learning process – knowledge produced in the classroom remains directly in students' hands.

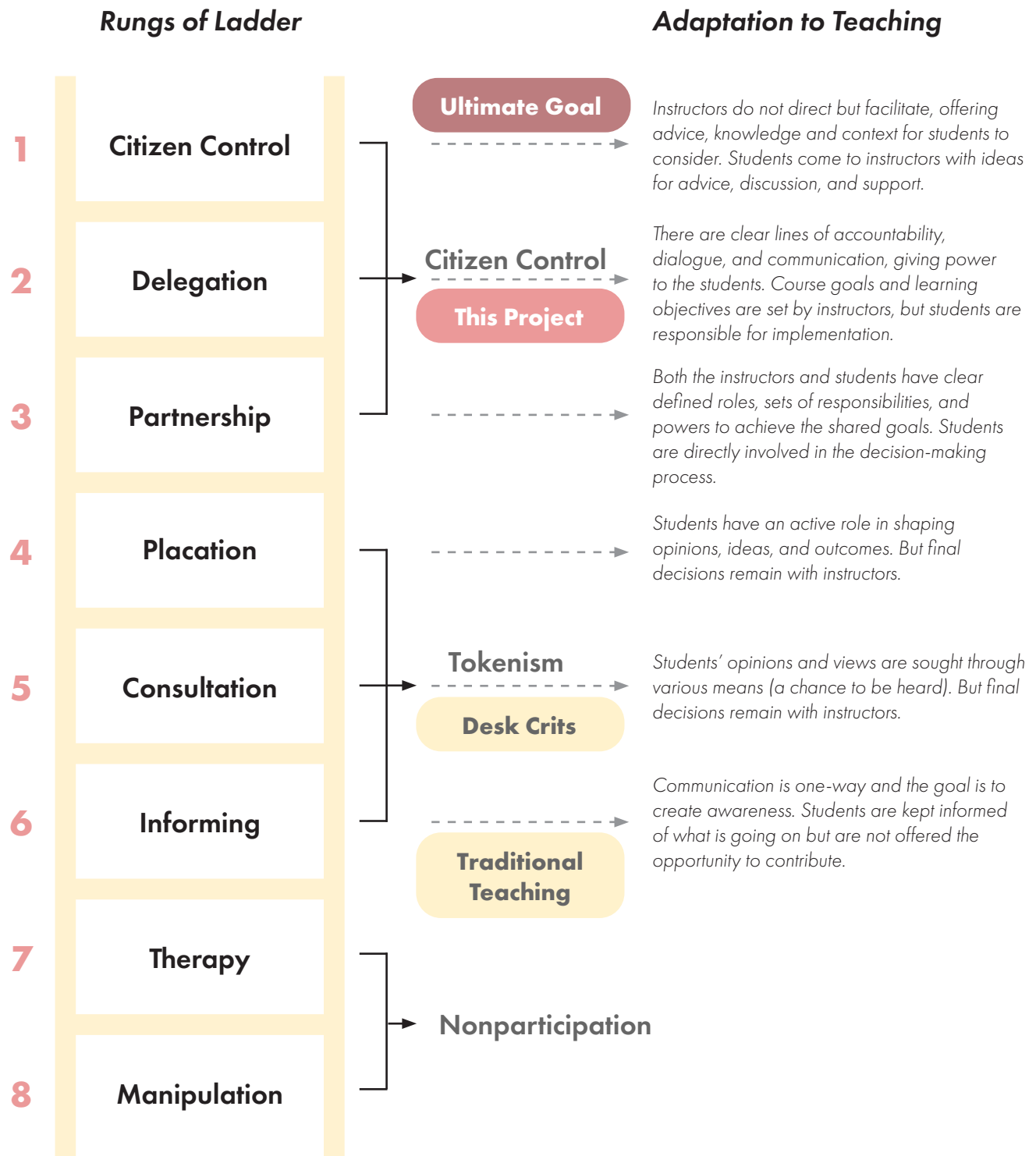


Figure 3. Arnstein's Ladder: Degrees of Citizen Participation, adapting to teaching

This project developed a Theory of Change to help conceptualize how the course activities would lead to short, medium, and long-term outcomes. Theory of Change is an approach whereby stakeholders in a planning or evaluating process of a project define their goals and identify the interventions to achieve the goals at different levels. ¹¹ In this project, Theory of Change guides the activities towards an ultimate goal of fostering an inclusive and

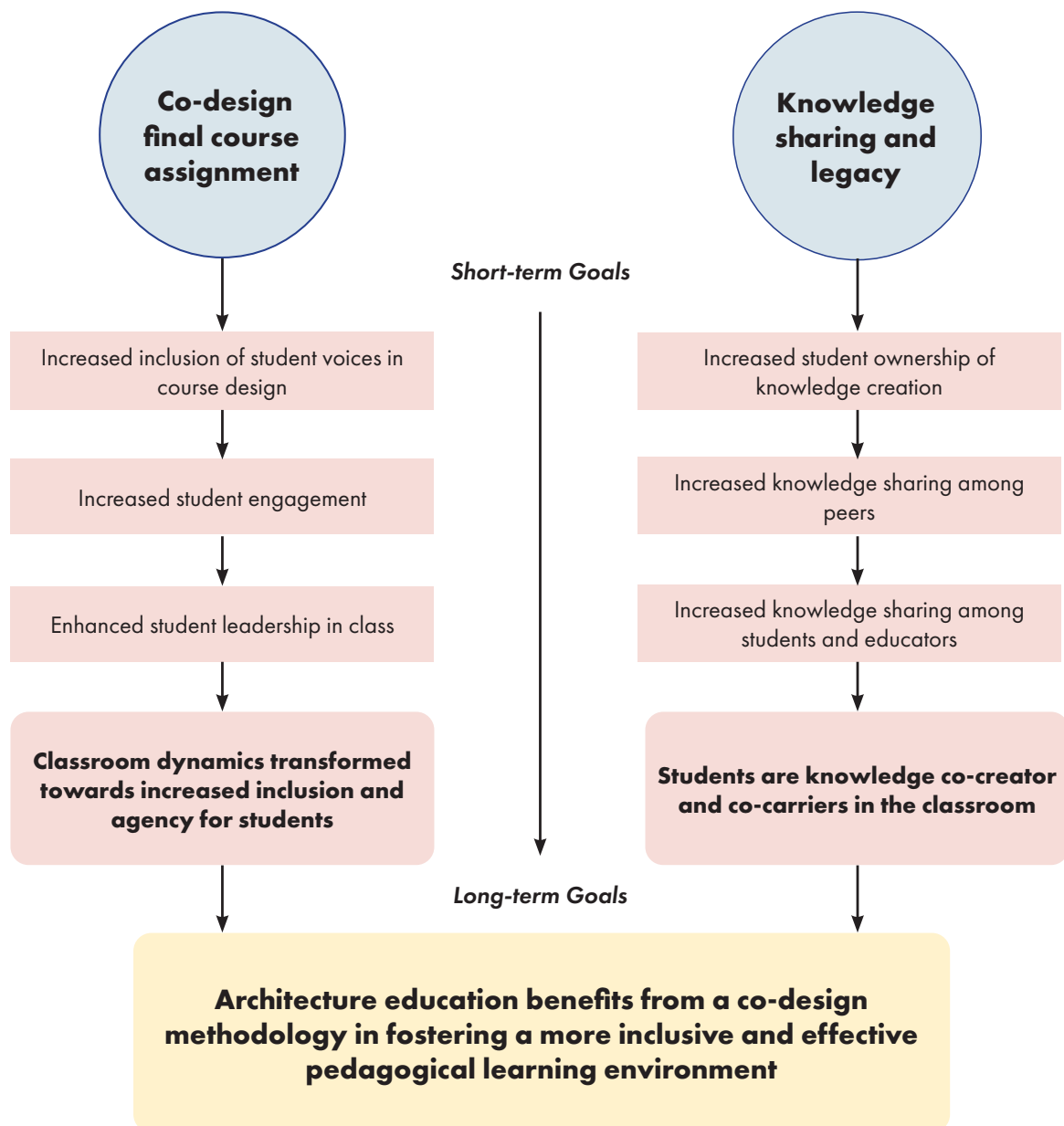


Figure 4. Theory of Change

empowered learning environment. This helps to set up evaluation processes that ask questions about student experience, to ensure the research is fully centred on students' academic and personal developments.

To capture this change, the project took a mixed-methods approach combining quantitative and qualitative data collection. Quantitative tools included baseline and final surveys to measure shifts in student perceptions and experiences over the duration of the course. Qualitative methods included one-on-one interviews and focus groups to collect personal accounts and capture group dynamics. All questions and measurements were governed by Theory of Change as indicated in Figure 4.

Data collection occurred in two phases. Phase 1 took place in Fall 2024 during the course, including baseline surveys administered at the early stage of co-design activities, and final surveys at the end of the course, along with interviews and focus groups to capture immediate impacts. Phase 2 was conducted one year after course completion in Fall 2025, and included follow-up surveys and a focus group to measure long-term impacts in students' personal, academic, and professional developments.

The course enrolled 14 students, with 12 participated in phase one data collection, and 7 in phase two.

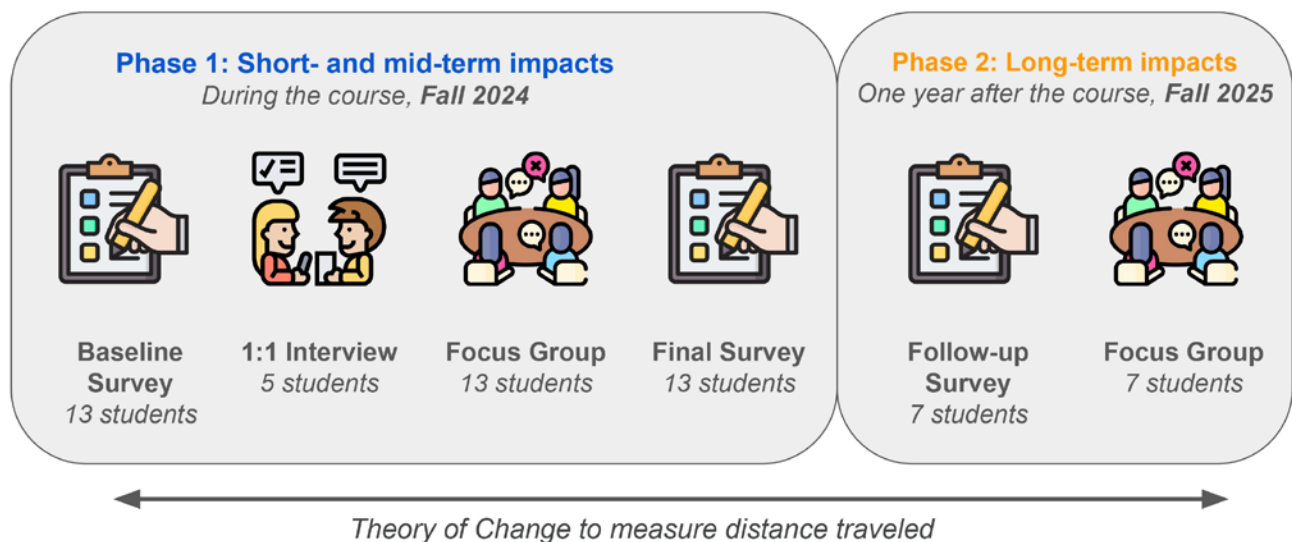


Figure 5. Data collection and impact evaluation took place in two phases.

Course Overview

The course ARCH 393 “Chinatown Memories: Co-Designing Community-led Architectural Heritage” was taught by Prof. Linda Zhang at the University of Waterloo School of Architecture during Fall 2024. It was a fourth-year undergraduate design studio with 14 contact hours per week.¹² It framed architecture as a medium for community-led memory and storytelling. Students were asked to use architectural strategies, such as models, mappings, and design interventions, to help preserve the cultural heritage of Toronto’s Chinatown and support community stewardship.

The course was structured around two co-design components. Outside the classroom, students co-designed storytelling sessions with Chinatown community members. Inside the classroom, students co-designed the course curriculum with peers and the instructor.

The studio was organized into three sequential modules: Project 1 (P1), P2, and P3, integrated with three community

engagement sessions in Toronto. Each module built upon the previous one, allowing students incrementally learn co-design principles and develop skills through practice and collaboration.

During P1 and P2, students worked collaboratively with over 300 Chinatown community members to gather oral histories and lived experiences that informed their design projects. Students co-designed different ways of interaction to support storytelling, including using architectural models of Chinatown restaurants as conversational prompts, and large maps that invited participants to write down spatial memories.¹³

Within the classroom, the learnings from the community engagement sessions were carried into the final assignment P3. With the regular support from the instructor, students collaboratively developed their project brief for their final projects and associated curriculum. P1 and P2 thus functioned as training modules for students

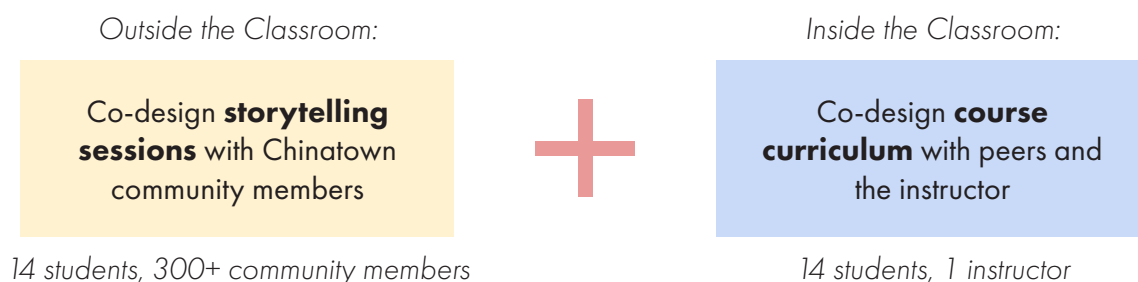


Figure 6. The course was structured around two co-design components.



Figure 7. A community co-design session in Toronto's Chinatown. (Photography: Yafang Shi)



Figure 8. A community co-design session in Toronto's Chinatown. (Photography: Yafang Shi)

to acquire the skills and knowledge for pedagogical co-design.

The final project P3 was subdivided into three components. In P3.1, students collectively determined the scope and format of their final projects both in-person and digitally on platforms like Miro and Google Docs. They co-authored project descriptions, deliverables, schedules, and grading rubrics, based on individual learning habits, academic ambitions, and project progress. In P3.2, students completed the tasks they had defined for themselves. P3.3 culminated in a public exhibition that presented the outcomes of all co-design work.

Throughout the semester, conventional desk crits were replaced by roundtable

and group discussions. The instructor sat among students engaging in conversations rather than leading from the front. Students rotated into facilitator roles and shared responsibility to steward the learning environment with their peers.

By embedding co-design at both community and curricular levels, this course foregrounded situated knowledge as central to architectural education. The instructor played the role of facilitator, rather than the knowledge gatekeeper. Students were responsible for producing and using the knowledge directly on their own projects. The redistribution of expertise disrupted traditional hierarchies between instructors and students, granting students the power to control what they learn, and how they learn.

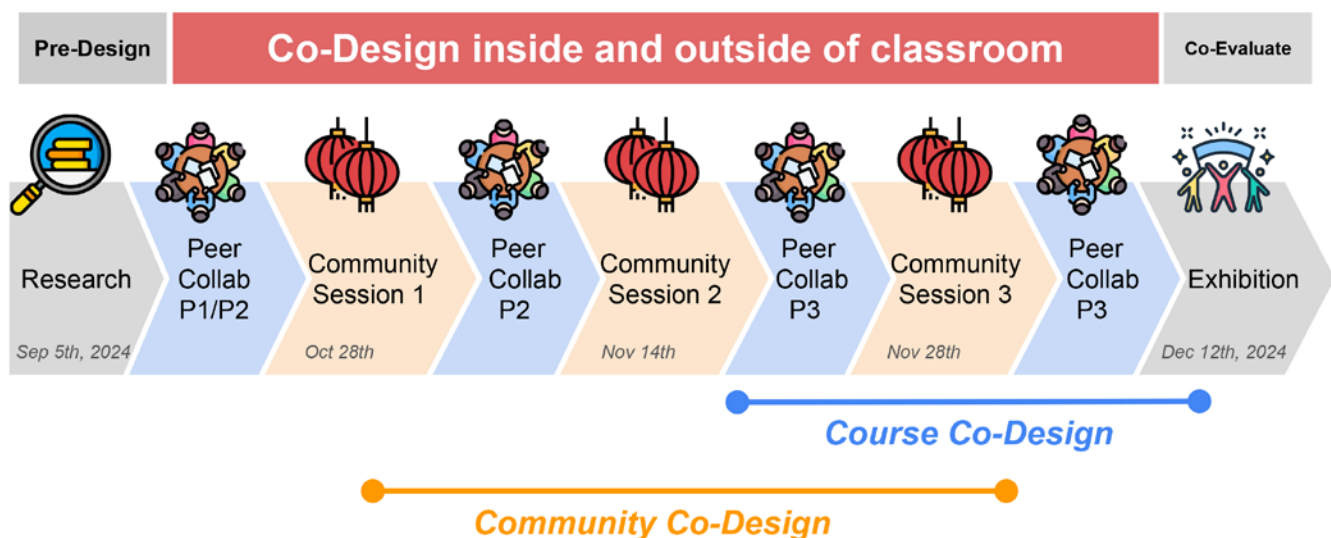


Figure 9. The course was organized into three sequential modules: P1, P2, and P3, integrated with three community sessions.



Figure 10. Students working together at the city archives. (Photography: Linda Zhang)



Figure 11. Group Discussions instead of desk crits. (Photography: Linda Zhang)

Group Reflection

What kind of format of a project are you interested in working on in P3?
What kind of deliverables does it?
What does its process look like?



6. Nov 21: Student Work Day

Prepare all elements necessary for the Nov 28 Event. This includes finalized base axonometric with all detailing of landmarks and wayfinding elements. ~~As well as~~ initial Oct 28 illustrations are to be pinned up alongside the map. Begin to finalize Design activities and prompts for community members, including translations, plotted drawings, and an itemized list of materials to bring.

7. Nov 25: STUDIO CANCELLED- worksession

8. Nov 28: Co-Design Session

Community members are invited to visit one of multiple themed duplicate maps to share personal memories, either written or illustrated, on overlaying sheets of trace/sticky notes

Tentative Schedule for Nov 28 Co-Design Session:

1:00 - 1:30PM: Intro to project proposal and run down of memory sharing activity.
Reserve time for questions and settling into initial assigned groups

1:30 - 2:40PM: Map Memory Sharing Session 4

In groups their assigned group which is assigned to an initial map, community members will annotate the map with their memories of Chinatown using sticky notes, drawings and writing, or pin-and-thread. These memories will be prompted through the theme sets that are found at that specific map.

1:50-2:40PM: Map Memory Sharing Session 1
In groups their assigned group which is assigned to an initial map, community members will annotate the map with their memories of Chinatown using sticky notes, drawings and writing, or pin-and-thread. These memories will be prompted through the theme sets that are found at that specific map.

MAPPING



ILLUSTRATION



LANDMARK DRAWINGS

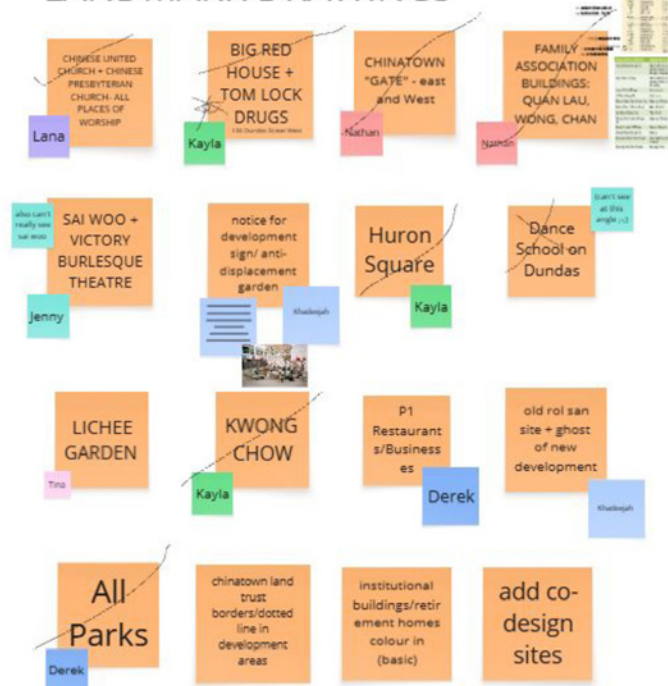


Figure 12. Peer collaboration on Miro and Google Docs.



Figure 13. The course culminated in a public exhibition at the school. (Photography: Fred Hunsberger)



Figure 14. The course culminated in a public exhibition at the school. (Photography: Fred Hunsberger)

Findings

1 This project effectively transformed classroom dynamics towards increased inclusion and agency for students.

The findings demonstrate that integrating PAR and co-design principles fundamentally transformed classroom dynamics, fostering a more inclusive learning environment, increasing student engagement, and cultivating leadership that enabled students to exercise greater agency over their learning. Rather than operating within a conventional top-down teaching model, this project prioritized collaboration among students, instructors, and communities, encouraging students to work collectively toward shared goals.

Students' experiences were further shaped by the instructor's teaching style and the community-oriented nature of the course. While collaborative activities and curriculum flexibility maintained students' engagement, the instructor's role in creating a psychologically safe environment was essential in enabling participation. Additionally, co-design with communities added a meaningful backdrop to the course. Students were able to foster greater responsibilities and develop a sense of purpose to create social impacts beyond the course.



Figure 15. Students working with community members in Toronto's Chinatown. (Photography: Yafang Shi)

Increased inclusion of student voices

The project fostered an inclusive environment where students felt encouraged to speak, share, and participate more openly than in conventional studios. Students consistently described the studio as a welcoming space thanks to the informal and conversational nature of the course, which not only made communication easier, but also improved their performance, and supported peer relationships.

*"I think that **we all made space for everyone's products and visions**. I was also able to have what I wanted as part of the final product, which was nice."*

*"Being able to share feelings and thoughts with classmates **eased the stress that would present in a typical studio**."*

*"Because the brief was (co-)designed by students, **it was easy to participate in the process and have my ideas heard**."*

The small class setting promoted participation, particularly for quieter students. Some described becoming more confident over time within smaller groups as familiarity built up.

*"I'm kind of quiet, when it comes to a lot of people. **As the group shrinks down, I talk more and more**. It's easy for me to share an idea. Thanks to that dynamic, **I had more of a voice as the studio went on**."*

*"I feel like in the beginning, it was hard for me to have my voice be heard because I get shy about sharing my opinion in a group, but over time, **as I got more familiar with other students, I became more confident in sharing my thoughts**."*

Instructor facilitation also played a critical role in sustaining this atmosphere. Active listening, regular check-ins, and responsiveness to student needs cultivated a safe learning environment.

*"Linda **provided a space for us to speak**, not only creating a welcoming atmosphere, but also just giving us time to think and speak up before moving onto the next topic."*

*"(The instructor) would check on us to see if the deliverables were still feasible for us and if it wasn't, she helped us scope down. There were constant instances where Linda would **ask us for input, so I felt very engaged in how this studio would run**."*

Increased student engagement

Students reported heightened engagement in course activities, thanks to the curriculum co-design that provided flexibility in students' learning. Students had more agency to shape the project's directions to align coursework with their own interest, values, and lived experiences, which sustained motivation to push their work further. This agency also translated into stronger accountability and knowledge ownership. Students described becoming more intentional about time management and project development. It also resulted in heightened sense of pride over their work, enabling long term investment beyond the duration of this course.

*"When I started **putting forward my own ideas and working with other people a lot more**, it helped me pick things that I was more interested in doing in the studio."*

*"I got to **push the project in a direction that I was interested in and wanted to work in**, and it fell well within the scope of the final project, which **kept me engaged and excited to see where it would lead**."*

*"This agency **makes me more accountable for my own time**. It's something that I set out to do and I'm really interested in. The brief made sure that we're all gonna keep track*

of our work and time. It also made us learn different parts of community engagements, planning an exhibition, and everything else."

*"Having agency in my own education **makes me feel much more invested and involved in the work I am producing** rather than it being something that I can forget about after its done."*

Community co-design and the public-facing component of the course further amplified engagement. Students addressed that the exhibition format in P3 made the learning process feel purposeful and rewarding, because their work carried more than their own ambition, but also the responsibility to represent collective efforts from the communities.

*"Hearing how the project would turn into an exhibition rather than it being a traditional architectural review made me **excited to see how it would move forward**, however, made me nervous."*

*"I think the best part about the project was the exhibition. We've never had that in a studio, but I think it was so rewarding to see all our work together, and definitely **made me want to produce a better and more cohesive set of projects**, because I could envision the final project. It was also more motivating to know that this work will have a longer life beyond the studio."*

Enhanced student leadership

This project strengthened students' confidence and capacity to exercise leadership within the classroom. Survey responses indicated that one of the most significant impacts occurred in students' ability to initiate discussions, uniting peers, and taking collective actions to shape their learning. The growth in leadership was granted by the collaborative nature of the course, where students are able to practice reflexivity on how to improve their learning.

*"Because we created the curriculum. We have **more control of the final outcomes**, and also we actually envision it to be a continued project outside of this course."*

*"I'm more confident because I've **learned how to work in a group setting**. Whenever I feel off track, I'd hear other people's ideas. I'm always thinking about - okay, how do I do this better and how should I work? **This course makes me feel more confident.**"*

*"This was such an untraditional studio, and there are incredible results that came out of collectively designing. **I feel confident in discussing these issues and bringing them to other studios to change my approach** to be more socially responsive and in line with what I am interested in."*

In contrast to traditional classrooms in which authority resides within the instructors, in this project, leadership emerged when the instructor intentionally made space for students' decision-making. The instructor's openness enabled students to challenge authoritarian positions and act on their own learning.

*"I'm a lot more comfortable bringing up issues or ideas regarding the project. I think in a typical studio, I wouldn't really question the type of work that I'm producing, or if the professor pushes me one way. I think I would typically go that way because I would assume that the professor knows better. (In this course) Even if the instructor offered one alternative, if I came up with a different alternative, or anyone else in the class did, **the instructor was still pretty receptive to shifting her perspective, so that really helped us take a lot of action, and shape the type of stuff that we're working on.**"*

Findings

2 This project enabled students as knowledge co-creators and co-carriers in the classroom.

The findings show that the project repositioned students as knowledge co-creators and co-carriers, challenging the traditional location of knowledge. Rather than treating knowledge as something passed down to students from instructors, this project structured a collaborative learning process in which students actively generated and owned the knowledge alongside peers and instructors. Through extensive collaborations, students reported increased confidence in skill-sharing and practiced collective decision-making,

leading to a stronger sense of ownership over their learning.

Knowledge production also became a reciprocal practice - both among students, and between students and the instructor. By actively incorporating student feedback, the instructor adapted the course structure and teaching to directly address students' needs and challenges. This responsive approach reinforced a mutual learning environment, further redistributing the hierarchical power dynamics in the classroom.



Figure 16. Students working with community members in Toronto's Chinatown. (Photography: Yafang Shi)

Increased ownership of knowledge

This project shifted knowledge production from a traditional top-down model to a collaborative process in which students actively generated and owned what they learned. Survey responses indicated a significant increase in students' ownership of knowledge, reflecting the change from passive reception to active participation. Such ownership also enabled students to pursue broader visions and push the boundaries of existing learning frameworks.

*"I feel **a lot more attached to the knowledge** created and learned in this studio in comparison to the past studios."*

*"It felt like it could actually **push the project a little bit more and achieve a bigger vision** because the deliverables didn't have to be a standard format. It could be pretty much anything you wanted. I think that by co-creating with my peers and classmates, we were able to get a better product in the end."*

This ownership also signifies a stronger sense of responsibility. As the result of community co-design, students described feeling accountable for their projects' social implications, and felt the obligation to act on the knowledge and create social impacts.

*"Compared to a traditional studio which is a lot more surface leveled, this studio gave me a **greater sense of responsibility**, which was welcome, and helped me perpetuate ideas of care, and how I can better care for people."*

Increased knowledge sharing with peers

Collaboration is one of the core principles of co-design. This project fostered reciprocal knowledge sharing by embedding collaboration throughout all stages of the course. The group activities provided an efficient platform for students to share skills, seek feedback, and learn from each other, contributing to an equal knowledge production process. Students generally reported increased confidence in peer collaborations, and addressed the diverse perspectives each person brought into the conversations.

*"Because there was a lot of group work involved, I felt **very confident to talk with my peers and reach out if I needed help.**"*

*"There are a lot of skills that we learned. Collaboration is a big part, because I think **we all got a chance to collaborate with each other.**"*

*"**Everyone was on the same pace to figure out the projects.** We all had our own unique contributions to the bigger ideas."*

“Co-creating was **helpful in seeing what other perspectives were from my classmates**, and what skills they would bring.”

Beyond learning, these collaborations also strengthened interpersonal connections within the studio. Some students expressed their increased comfort in socializing.

“I think I’ve definitely **gotten closer and more comfortable with some of my classmates** that I usually don’t speak to.”

Increased knowledge sharing with educators

A key goal of the project is to transform the imbalanced power dynamics in traditional architecture education. Rather than positioning knowledge solely with the instructors, this project framed knowledge production as a reciprocal process in which both students and the instructor contributed insights and decision-making. Survey responses evidenced this mutual knowledge exchange. Students frequently described their relationships with the instructor as non-hierarchical, which enabled more open and efficient conversations.

“I think there was a very friendly relationship with Linda. **She made us feel like equals so there was never any sense of power dynamics.** We were always learning from her and

it seemed like she was also learning from us.”

“Throughout this entire studio, I’ve had a total of 2 formal crits with her (the instructor). And then all my other time with her was never like professor-to-student relationship. **It felt like you’re working with a classmate.** But she still imparted a lot of valuable knowledge to us. Whether it’s within this course, or just life advice in general which I really appreciated. I really enjoyed that dynamic, and it **felt like we could have better and more open conversations.**”

Importantly, reciprocity extended beyond students’ learning. Many observed that the instructor actively documented and incorporated student feedback into curriculum adjustments, to facilitate a more inclusive and responsive learning environment. This reciprocal knowledge co-creation process redistributed classroom authority, and directly challenged the traditional top-down teaching model.

“We would give her any type of feedback we had, whether it’s with the curriculum, or whether it’s with the project, with her teaching style or with the use of time. She would often start with group meetings to check in. So we would all talk about how we were feeling with the project, what issues we had, and then **she would take notes, and then she would make changes accordingly.** So I think in that aspect **she’s definitely**

learned a few things about students from our part.”

“Whenever I would talk to Linda about an idea, she would always have suggestions on the best methods of execution. I learned a lot from her suggestions and it helped push my ideas forward. I think Linda was able to take a lot of our feedback regarding community engagement sessions and implement that into future ones.”

“She pushed us to do something that we truly wanted to do and really like. It benefits both ends, so the *students would benefit by being happy with what they were doing*, and as well as for the *instructor to see the result of students doing what they had liked from the start.*”



Figure 17. Students working together to set up the exhibition. (Photography: Kayla Estacio)

Findings

3 This project sustained knowledge legacy, and created long-term impacts for student development.

This project generated lasting impacts by equipping students with co-design experience and confidence extended beyond the duration of the course. Students reported sustained agency in navigating hierarchical environments, applying collaborative skills in subsequent studios. Phase 2 evaluations revealed a clear contrast between this project and more conventional ones. In students' subsequent

studio course after ARCH 393 in Fall 2025, students described encountering rigid course structure and institutional expectations that limited decision-making and flexibility. Those who had participated in this project demonstrated a greater willingness to question instructional decisions, and advocate for alternative approaches that benefit their learning.



Figure 18. Students presenting their projects at the exhibition. (Photography: Kayla Estacio)

"A challenge that my partner and I came across (in current studio after ARCH 393) was that the deliverables weren't in line with what we had for our project. **It was difficult to make decisions since the deliverable felt very solid and non-negotiable.** So I think it **could benefit from the co-design process where we sat down with the instructor and talked about different deliverables.**"

"What I appreciated about the Chinatown Studio (ARCH 393) was that, **we always asked what everyone wanted to do.** I tried bringing that into my group project in the Rome Studio, but because my partners were not in the Chinatown Studio, **they were not used to these types of conversations.**"

Students described transferring skills developed in this studio, specifically curriculum co-design, into new studio contexts through leadership and reflexivity. They expressed continued confidence to negotiate with instructors to decide how their work is presented. This suggests powerful impacts that influence students' learning habits.

"Because we got the **agency to design our brief for our last studio, we felt like we were able to modify this brief** (in our current studio) a lot more, and tell our professors during the crit, like, I know this is what the brief says, but we truly think that our project would be represented best with this set of drawings. So I think just **having that experience**

from last term gave us the confidence to know that sometimes we know what works best for our project."

Students also demonstrated behaviour changes in engaging with authority figures. Students reported feeling more confident to initiate conversations with instructors and workplace supervisors. The project created potentials to further transform power dynamics in new contexts.

"I think I **became more casual with the professors.** I think that was a great thing that I learned from Linda, was just treating them like they're friends, even though they're not. **It's just easier to present your idea and receive honest feedback from them.** Interacting with professors in a more direct way, which lets them get to know us a lot better and really see the design, and push us forward."

"I am no longer fearing that much talking to people of authority, and I am able to converse with a group of people that you don't really know. I find that sometimes, especially during co-op, the hierarchy is definitely more apparent than at school, but I think ever since Chinatown Studio, **it's a lot easier for me to talk to someone who is higher up**, such as the manager, and be a little bit more honest with them."

Key Challenges

1 Time and Capacity

The most immediate challenges were constraints related to time and instructional capacity. Implementing both curriculum co-design and community engagement within a three-month semester was ambitious and required extensive preparation and real time support. The tight schedules, limited instructor capacity, and high demand of community sessions, had resulted in overwhelming workload

and pressure for many students. While co-design encourages freedom and flexibility, the compressed timeline limited opportunities for students to fully develop these processes. Students expressed that balancing curriculum co-design and community sessions as a constant pressure, with little time to further explore the benefits and potential of the co-design framework.



Figure 19. Students working with community members in Toronto's Chinatown. (Photography: Yafang Shi)

*“When students were creating the curriculum, we were already aware of the given timeframe and how much we could accomplish. In this case, **we kind of took advantage of the co-design process, and just did the minimum work for us to meet the deadlines.**”*

“It feels like a constant race with breaks in between and that feeling of stress never really went away. I don’t know what the answer is looking back, because it all makes sense to me, but it was very stressful at the moment.”

With curriculum co-design remaining a new concept, many students asked for adequate guidance from the instructor to support their learning. However, limited instructor capacity sometimes resulted in uncertainty about expectations and project direction. While it was empowering to design their own curriculum, some students demanded more structured guidance to navigate the unfamiliar process.

*“So much agency being placed in the hands of students also means that **I am missing out on stuff I fully don’t know about,** thus, I think guidance from the instructor would be helpful.”*

*“In the beginning, we thought we would have a lot of agency to design whatever we want for this brief. But towards the end, it felt that we were pushing into a specific direction... **There was a very short amount of time to fully grasp what was going on.**”*

*“It would have been a little helpful if at **some point earlier on in the studio if we had known the final project** was going to be in the exhibition at the school.”*

These experiences reveal a key challenge in any co-design project: it requires sufficient time and facilitation to fully support participants without causing excessive pressure. In a pedagogical environment, instructors would need to start preparation early, provide check-in and clarifications regularly, and allocate additional instructional resources across the semester.



Figure 20. Students showcasing their projects at the exhibition. (Photography: Fred Hunsberger)

Key Challenges

2 Consensus Decision-Making

Redistributing power within the studio also surfaced another challenge – peer-to-peer power dynamics. While instructor-to-student hierarchies were disrupted in this project, new forms of imbalanced power relations emerged through peer collaboration. Some students expressed difficulties having their voices heard during group work, due to biases and personality traits. Several students described challenges in navigating decision-making processes, particularly in large groups where competing ideas and interpersonal dynamics were at play.



Figure 21. Students working together to prepare the exhibition. (Photography: Linda Zhang)



Figure 22. Students working with community members in Toronto's Chinatown. (Photography: Julian Carrington)

*"I felt **working in larger groups was very difficult when other members had different opinions and aspirations for what they wanted.***

It would get to a point where members would split off and discuss with 1-2 other classmates and bring their opinions back to the whole group, almost presenting their ideas without consideration for others members' opinions."

*"When co-creating the brief, I felt it was **very stressful because we had to listen to everyone in the class.** So having to ask for each other's input and other classmates sometimes would get for myself, I would feel uncomfortable, because sometimes - you would give your opinion, and sometimes some students might not take it well, or it's different from their opinion. And then I feel **it would be very difficult to meet at a middle ground** where we're all thinking the same thing, or have the same topic without anyone getting upset. I found that was really difficult."*

Peer dynamics further revealed uneven distribution of power. Students who were more vocal felt pressure to self-regulate their participation to avoid appearing dominant, while quieter students struggled to have their voices heard. These experiences reveal a significant challenge in the co-design process, because collaboration does not automatically produce equitable participation.

*"Our group in general was more quiet. So sometimes I was more vocal and facilitated the discussions. But **I wish others who didn't feel comfortable to talk in a discussion could contribute too.** I think the discussions should be more diverse. **The group atmosphere had pushed me to be more vocal.** We were not fighting, we were just having a nice conversation."*

*"I am pretty good at voicing my opinions and making my voice heard, however, discussions would often end up quiet and with a lack of participation. And in turn, I had two options to pursue, one was to continue leading the conversation which I rarely did. And the second one was to stop leading the conversation and let it quiet down. Why did I choose to do that? Because I **didn't want to come across as overbearing, aggressive or too active during the process which I know can give the impression of not listening to other people's voices.** But it ultimately was very difficult for me, because I had to straddle the line of this issue and I wasn't sure how to approach it."*

Addressing this challenge requires attention and efforts to the consensus decision-making process to ensure no one is left behind. A true consensus collaboration requires each person to have an equal chance of proposing ideas and agreeing on the final solution. Group discussions should be built upon mutual understanding and shared visions, to ensure all parties are equal parts of the process.

Key Challenges

3 Course Structure

Finally, while flexibility in this studio increased student engagement and agency, it also exposed students to an imbalance of autonomy and authority. Some students described the flexibility to be overwhelming, particularly the endless possibilities that co-design could bring.

*"I think being so flexible in co-design has its weak points. Similar to how strictly adhering to one brief also has its weak points. **The flexibility allowed us to do what we thought might be better,** and we could constantly change it. But it also added a lot of stress, because we were constantly changing it. **We changed so often that we didn't know what we were trying to do next.**"*



Figure 23. Students working together during community sessions. (Photography: Yafang Shi)

Several students struggled with the lack of structure and predetermined pathways in this course, thus asking for clearer instructions and even an authoritarian hierarchy. Some proposed to have a mixed structure with both conventional teaching approach and co-design components to re-balance existing framework without sacrificing agency and empowerment.

*"Sometimes I did question how much useful information we were teaching the instructor and if everything that we did, if the instructor also knew. I think **more 1-on-1 or group conversations to present our work to the instructor would have been useful.**"*

*"I think future studios should be a mix of this one and the traditional ones. I think we needed a little bit more guidance. Again, the flexibility, we all enjoyed that. But **some sort of framework and initial structure would've been helpful.**"*

*"I think she (the instructor) gave us a little bit **too much freedom.** Because we've never truly and never been in this type of situation where you could do anything you want. I think **a little bit more structure in the beginning could have helped guide us** to create more cohesive project briefs and more cohesive projects."*

Most significantly, some students exhibited resistance to this collaborative model and, at times, reproduced the very hierarchies this project sought to unsettle. For example, during P3, students were invited to regroup and form new partnerships, so that knowledge produced in early phases could circulate more widely across the class. All students initially agreed. However, post-course evaluation revealed that many felt pressured to do so, and the new groups produced worse peer dynamics as students were no longer working with their most trusted partners. Had students voiced their preferences more openly, this process could have been more deliberate. Existing power structure of who gets to make decisions still unconsciously presented itself here.

A similar pattern in curriculum co-design, students were offered the option of incorporating peer and self-evaluation into the grading rubric. All students felt extremely uncomfortable with this format and collectively insisted on returning to traditional instructor-led assessment, thus reintroducing the authoritarian structure. These moments suggest the critical need to support students in unlearning and reshaping institutional memories and practices.

Recommendations

The learning from this project has produced recommendations for both pedagogical environments, as well as co-design projects in various contexts.

For teaching and learning

1. Conventional desk crits in architectural education reinforce the asymmetric power relations between instructors and students. This project demonstrates that peer critique can create inclusive and collaborative spaces for reciprocal learning. More peer critiques and group sessions can help redistribute authority in the studio for collective knowledge production.
2. Instructors should be repositioned as facilitators and allow students to lead discussions. Rather than being knowledge gatekeepers, instructors should actively listen to students, and support them in becoming the knowledge carriers.
3. Current teaching practices should challenge the “sage on the stage” model by recognizing situated knowledge beyond the classroom. This includes engaging community members in teaching and learning, and prioritizing lived experiences in knowledge production.

For co-design projects

1. Co-design projects are labour-intensive. It requires substantial preparation from organizers, and regular check-ins and reflexive facilitations during implementation to ensure participants have enough time to develop skills and achieve the goals.
2. Flexibility is a core principle of co-design, but flexibility without a solid foundational structure can become overwhelming. Projects should therefore establish a strong framework so that participants can exercise agency without being lost in the uncertainty from co-design.
3. This project reveals that collaboration alone does not guarantee equal participation. Co-design projects should address consensus decision-making processes to ensure each participant holds equal power to achieve the collective goals. This could be achieved by, for example, rotating facilitation, small-group discussions, and regular check-in and debriefs.



Figure 24. Students and the instructor loading models to prepare community sessions.



Figure 25. A community session in Toronto's Chinatown. (Photography: Julian Carrington)

Conclusions

This course provides an evidence-based case study demonstrating the effectiveness and limitations of PAR in empowered learning within architectural education. By embedding co-design at both community and curricular levels, this course foregrounded situated knowledge as central to learning. The instructor played the role of facilitator, rather than the knowledge gatekeeper. Students assumed responsibility for producing and applying the knowledge directly on their own projects and beyond the course. The redistribution of expertise disrupted traditional classroom hierarchies, granting students the power to control what they learn, and how they learn.

This project remains a pilot study as an elective course outside the core architecture education. In preparation for this course, and to secure institutional approval for a non-normative teaching model, the instructor undertook extensive impact evaluation and assessment to ensure that the course activities were research- and evidence-based, and could inform future implementation. We acknowledge the privilege involved in being able to experiment and practice alternative pedagogical approaches, which might not be the reality for many educators and institutions. The value of this project, then, lies in identifying and implementing the effective portions to be adapted, carried forward, and integrated into core education across disciplines.



Figure 26. Students from ARCH 393 with Professor Linda Zhang.

Work Cited

- 1** Joan Ockman and Rebecca Williamson, *Architecture School: Three Centuries of Educating Architects in North America* (MIT Press, 2012), 11.
- 2** Paul P. Cret, "The Ecole Des Beaux-Arts and Architectural Education," *Journal of the American Society of Architectural Historians* 1, no. 2 (1941): 3–15, <https://doi.org/10.2307/901128>; Richard Chafee, "The Teaching of Architecture at the École Des Beaux-Arts," in *The Architecture of the École Des Beaux-Arts*, ed. Arthur Drexler (The Museum of Modern Art, 1977).
- 3** Aaron Koch et al., *The Redesign of Studio Culture: A Report of the AIAS Studio Cultural Task Force* (The American Institute of Architecture Students, 2002), https://www.aias.org/wp-content/uploads/2016/09/The_Redesign_of_Studio_Culture_2002.pdf; Donald A. Schön, *The Design Studio: An Exploration of Its Traditions and Potentials*, with RIBA Building Industry Trust, *Architecture and the Higher Learning* (RIBA Publications for RIBA Building Industry Trust, 1985).
- 4** Dana Cuff, *Architecture: The Story of Practice*, 1st MIT paperback ed. (MIT Press, 1992), 126; G. Goldschmidt, "'One-on-One': A Pedagogic Base for Design Instruction in the Studio," paper presented at Common Ground - Design Research Society International Conference 2002, September 5, 2002, <https://doi.org/10.21606/drs.2002.24>.
- 5** Stanley King, *Co-Design: A Process of Design Participation*, with Bill Latimer et al. (Van Nostrand Reinhold, 1989); Caroline Lenette, *Participatory Action Research: Ethics and Decolonization, Research to the Point* (Oxford University Press, 2022).
- 6** Rob Fiehn et al., *Collective Action!: The Power of Collaboration and Co-Design in Architecture, Design Studio ; Volume 6* (RIBA Publishing, 2023), <https://doi.org/10.4324/9781003394945>
- 7** Stanley King, *Co-Design: A Process of Design Participation*, with Bill Latimer et al. (Van Nostrand Reinhold, 1989).
- 8** Caroline Lenette, *Participatory Action Research: Ethics and Decolonization, Research to the Point* (Oxford University Press, 2022).
- 9** Chelsea R. Willness et al., "How Arnstein's Ladder of Citizen Participation Can Enhance Community-Engaged Teaching and Learning," *Academy of Management Learning & Education* (Briarcliff Manor) 22, no. 1 (2023): 112–31, <https://doi.org/10.5465/amle.2020.0284>.
- 10** Willness et al., "How Arnstein's Ladder of Citizen Participation Can Enhance Community-Engaged Teaching and Learning."
- 11** Ren, Ke, and Conor Mc Guckin. *Using Theory of Change as Both Theory and Method in Educational Research*. SAGE Publications, Ltd., 2022. <https://doi.org/10.4135/9781529601596>.
- 12** The course ARCH 393 enrolled 14 students with 14 contact hours per week. This was required by the accredited professional architecture programs: The minimum contact hours are 12, and the maximum instructor to student ratio is 15.
- 13** Simon Liao, "Chinatown Memory Collectors," *Spacing Toronto*, January 21, 2025, <https://spacing.ca/toronto/2025/01/21/chinatown-memory-collectors/>.



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