



JULY 2021

Transforming the Instructional Landscape

A Design Thinking Process Guide for Learning Space Re-Design

INTRODUCTION

Transforming the Instructional Landscape (TIL) is an ongoing project at the University of Toronto that examines how learning environments can be improved for students and staff. In March 2020, TIL released a report that provided recommendations for how design researchers can become trusted partners in the learning space re-design process through involving stakeholders every step of the way. These findings informed the creation of this Process Guide and present a toolkit for how design researchers can make any classroom redesign process as iterative and human-centered as possible.

TIL has found that the most successful learning space re-designs are those which incorporate stakeholder voices throughout the process. The hope is that this guide will help foster the creation of inviting and human-friendly instructional spaces across academic institutions.

HOW TO USE THIS GUIDE

The guide includes three sections, Research, Design, and Delivery, along with a list of actionable items for each sub-section. These actionable items are presented in the form of a checklist so that design researchers can consult each list as they conduct their own classroom re-design research and consultation. At the end of the report under **Suggested Methods**, we have provided a comprehensive list of research methods that can be used to execute the actionable items we have suggested. To learn more about any of these methods, links to reputable sources for further reading have been included.



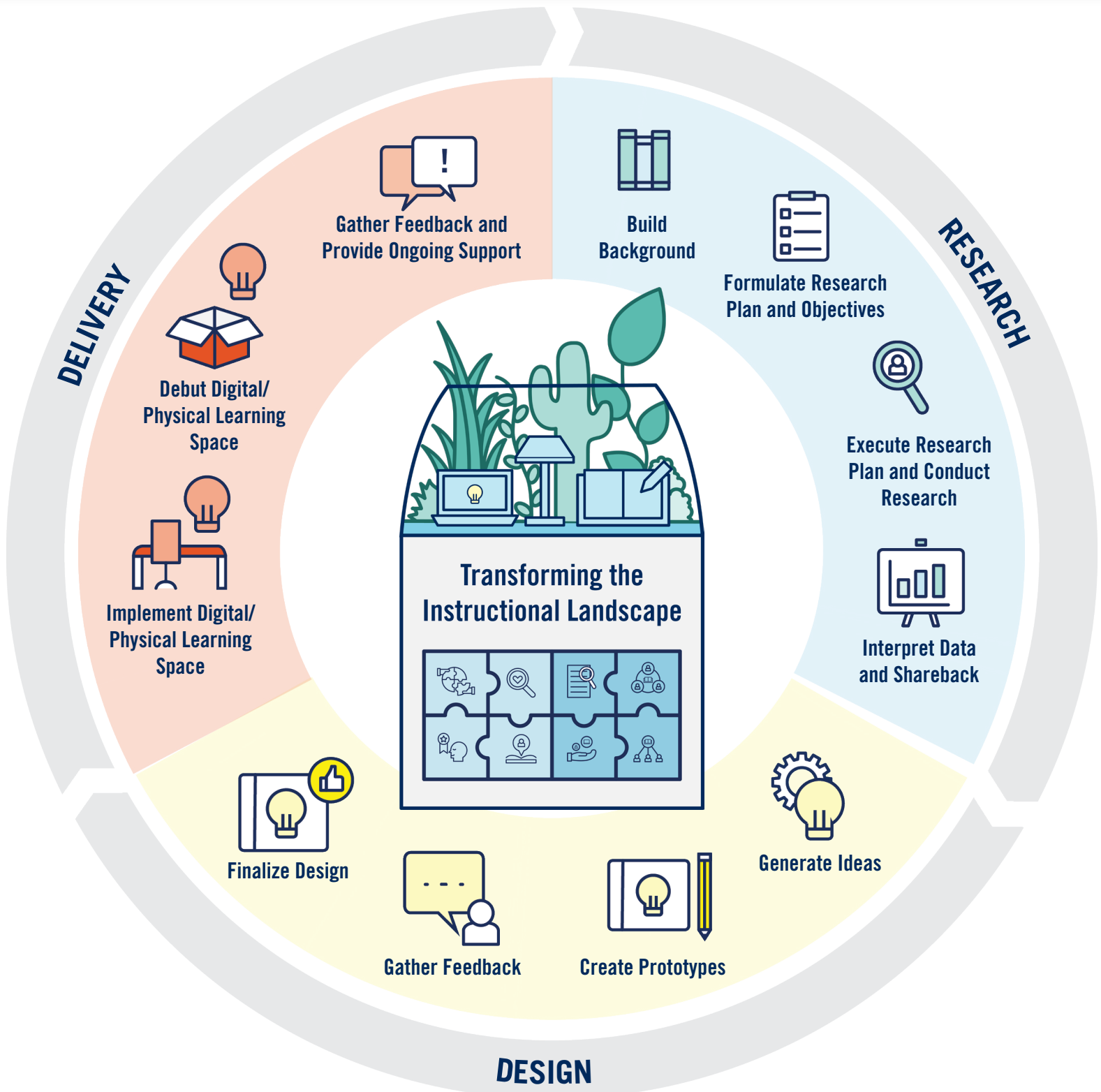
GENERAL PRINCIPLES

Below are nine general principles to keep in mind when Design Researchers are engaging in the Research, Design and Delivery phases that involve stakeholder or participant consultation:

1. Build trust through transparency by encouraging designers to provide stakeholders with a window into the design process.
2. Allow stakeholders to see how their feedback is reflected in the redesign and share with them how their insights impacted the design decisions.
3. Communicate project timelines and any shift in timelines with stakeholders.
4. Open multiple channels for communication with stakeholders to maximize engagement.
5. Encourage authenticity with stakeholders by engaging them on their own terms and avoid using technical and/or unfamiliar language when doing so.
6. Engage with various groups of stakeholders for consultation to gather rich information.
7. Maintain community buy-in throughout the design process by regularly communicating with stakeholders and providing an opportunity for process updates.
8. When possible, engage in person-to-person interactions to build a collaborative working environment for stakeholders to feel comfortable participating in.
9. Even after the design is complete, it is important to maintain a dialogue with stakeholders and work to continually improve the designs.

DESIGN THINKING PROCESS GUIDE

Below is a visual representation of the Research, Design, and Delivery phases. This diagram aims to show how the process is iterative and there is no one-size-fits plan to execute design research. To learn more about each phase and the methods involved in carrying out that phase, continue reading the sections below.



RESEARCH

Building Background

Understand the broad context of learning space and technology uses, unmet needs, and accessibility concerns at your institution. The goal is to formulate the desired outcomes of the consultation process and to anticipate project limitations.

Actionable Items:



- ☐ Develop an understanding of what other institutions and organizations are doing.
- ☐ Develop an understanding of the current context of the physical and digital learning space. Understand the factors that influence how users interact with the space.
- ☐ Acknowledge and address the limitations of the current learning space.
- ☐ Identify the stakeholders and ensure that the research participants reflect the diversity of these stakeholders.

Formulate Research Plan and Objectives

Finalize a consultation plan that reflects the diversity of stakeholders, prioritizes their design needs, and accounts for barriers to participation.

Actionable Items:



- ☐ Consolidate previously identified design needs and incorporate them into the research questions.
- ☐ Develop the research plan, key questions, and consent process.
- ☐ Consider and account for barriers to participation in the consultation process.
- ☐ Develop a plan to communicate updates and feedback opportunities to participants in the consultation process.

Execute Research Plan and Conduct Research

Execute the plan you have developed to uncover answers to your key research questions and areas of interest.

While different questions require different research methodologies, below is a list of potential methods you can employ:



- ☐ Co-design session(s) with stakeholders.
- ☐ Affinity diagrams to categorize qualitative data into themes.
- ☐ Semi structured interviews.
- ☐ Surveys to gather quantitative data to get a general sense from a larger pool of participants.
- ☐ Focus group(s) to gather qualitative data from a guided discussion about specific topics with a group of people.

Interpretation and Shareback

Ensure that the assessment of uncovered data is consistent with participant views and the identified needs.

Actionable Items:



- ☐ Analysis and interpretation of the data collected. Here are some methods for doing so:
 - **Coding of transcripts/observation notes** and **thematic analysis** of the data.
 - **Affinity diagramming.**
 - **Empathy mapping.**
 - **Persona creation.** Personas can then be used to help create a journey map.
 - **Journey mapping** the experiences of each of the key stakeholders.
- ☐ Assess the biases and interests which might influence the analysis of data.
- ☐ Reach out to stakeholders to assess whether the problem space has been correctly interpreted and addressed.
- ☐ Receive feedback from stakeholders to formulate more accurate objectives and scope for the design.
- ☐ Identify research gaps, clarifications, or follow-up questions that are needed before analysis is finalized.

DESIGN

Generate Ideas

Translate research data and stakeholder feedback into ideas for physical/digital learning space designs. Generate diverse solutions that meet the needs of the targeted group of stakeholders. Provide diverse ways for stakeholders to participate in the design process.

Actionable Items:



- ☐ Review stakeholder feedback and translate research into concrete ideas.
- ☐ Explore various avenues for participants to generate more diverse ideas.
- ☐ Establish a scope for the design, objectives and key measures of success.

Create Prototypes

Refine design ideas using project objectives and stakeholder requirements. Consider the impact and feasibility of each idea, as well as the inclusiveness and accessibility for current and future users. Begin a conceptual design and create prototypes to test with users.

Actionable Items:



- ☐ Narrow down design ideas based on impact and feasibility.
- ☐ Conduct relevant accessibility reviews.

Gather Feedback

Present and test the prototype with targeted stakeholders to collect their feedback. Communicate with stakeholders to explain how their insights translated into the design decisions and features. Determine if further steps are needed to ensure stakeholders' needs are met.

Actionable Items:



- ☐ Market and present the design concept to stakeholders.
- ☐ Communicate user input with stakeholders.
- ☐ Determine whether stakeholders are satisfied with the prototype.
- ☐ Reiterate "Generate ideas" or "Create Prototypes" step(s) as necessary.

Finalize Design

Finalize the design and receive approval from stakeholders before implementing the final changes. Communicate progress updates with stakeholders.

Actionable Items:

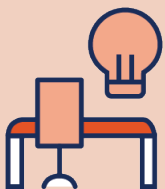


- ☐ Request final approval of implementation design from stakeholders.
- ☐ Assess the potential risks that the design poses and develop mitigation plan.
- ☐ Reiterate "Create Prototypes" or "Gather Feedback" step(s) as necessary.
- ☐ Once design is finalized, coordinate with internal teams including AV, IT, engineers, architects and designers.

Implement Digital/Physical Learning Space

Complete construction of the learning space/implementation of technology. Communicate progress updates and timelines with stakeholders. Determine what training or introductory resources are needed for stakeholders and support their transition into the new space.

Actionable Items:



- ☐ Determine what training/introductory resources will enable stakeholders to use the physical space/technology.
- ☐ Communicate progress and updates to stakeholders.

Debut Digital/Physical Learning Space

Debut new physical/digital learning space to stakeholders and provide training to instructors and students through workshops and learning space orientations. Continue providing progress updates to stakeholders, as well as the expected time of completion to allow instructors time to adapt to the changes.

Actionable Items:



- ☐ Collaborate with stakeholders to determine and plan for opening dates.
- ☐ Develop and execute marketing plan for the new learning spaces and technology being debuted.
- ☐ Establish operational oversight of new learning spaces between multiple stakeholders.
- ☐ Solicit feedback from implementation processes to inform ongoing maintenance, tech support and future renovations.
- ☐ Introduce/provide training in use of new features to instructors and students through workshops and orientations.

Gather Feedback and Provide Ongoing Support

Engage with learning space users and IT staff to determine pain points with new spaces, technology, or teaching tools. Collect ongoing feedback from key stakeholders to help determine next steps. Work with stakeholders to facilitate ongoing training and support resources. Implement new updates and technology as it becomes available.

Actionable Items:



- ☐ Gather feedback on technology and maintenance needs to inform future learning space re-design/improvements.
- ☐ Provide ongoing technical support.
- ☐ Determine how the insights uncovered surrounding technology use and pain points can inform future learning space renovations.
- ☐ Determine how ongoing maintenance needs can be addressed in a more permanent manner.
- ☐ Determine how TIL can facilitate cooperation between multiple organizational stakeholders in charge of learning spaces.

SUGGESTED METHODS

- **Affinity diagramming** is a method by which researchers organize large data sets according to their thematic relationships with each other. To learn more, visit: <https://www.interaction-design.org/literature/article/affinity-diagrams-learn-how-to-cluster-and-bundle-ideas-and-facts>
- An **Annotated Bibliography** is a summary of available research on a specific topic. Each source is listed in alphabetical order with a concise summary and analysis. To learn more visit: Writing an Annotated Bibliography | Writing Advice. (n.d.). Retrieved June 8, 2021, from <https://advice.writing.utoronto.ca/types-of-writing/annotated-bibliography/>
- A **Co-Design Session** (also called a **Co-Creation Session**) invites the people affected by the problem or research question to participate as partners in ideation. For more information, visit: <https://www.designkit.org/methods/33/>
- An **Empathy Map** is created after collecting qualitative data and is a summary of what a participant might say, think, do and feel while using a product or service. To learn more, visit: <https://www.ideo.com/blog/build-your-creative-confidence-empathy-maps>
- An **Environmental Scan** (also called a **Market Scan**) is the process of examining the internal and external environment of your product, service or topic area and then identifying potential strengths, opportunities, barriers and weaknesses. To learn more visit: <https://guides.library.pdx.edu/c.php?g=271164&p=1811707>
- **'Explore, Imagine, and Play'** is an event model used by TIL during feedback sessions. These events are set up in public spaces across campus, and provide participants with three unique, interactive experiences. "Explore" was a space to share thoughts with photos of different types of classrooms. "Imagine" asked participants to respond to open-ended, blue-sky style questions. "Play" was an opportunity to test classroom furniture and share their reactions using feedback cards.
- **Focus Groups** (also called **group interviews**) is a method where the researcher interviews a group of individuals (typically 5-8 people) together. To learn more visit: <https://www.designkit.org/methods/20/> and <https://www.nngroup.com/articles/focus-groups/>
- An **Impact-Feasibility Matrix** (also called a **prioritization matrix**) is a visualization that compares the impact and feasibility of a several ideas in order to help researchers choose an idea of focus. To learn more, visit: <https://www.nngroup.com/articles/prioritization-matrices/>
- An **Interview** involves 1-2 researchers meeting with a participant to ask them questions and understand their experience. To learn more, visit: Interviewing Users. (n.d.). Retrieved June 8, 2021, from <https://www.nngroup.com/articles/interviewing-users/> and; <https://www.designkit.org/methods/2>
- A **Journey Map** is a visualization of a customer or user's experience with a product or service. To learn more, visit: <https://uxplanet.org/a-beginners-guide-to-user-journey-mapping-bd914f4c517c> ; <https://www.designkit.org/methods/63>
- **Learning Space Observations** (also called **participant observation**) field study or ethnographic observation. Although there are numerous ways this method can be done, in general it involves the researcher immersing themselves in the participants' environment in order to learn more about their experiences. For more information, visit: Field Studies. (n.d.). Retrieved June 8, 2021, from <https://www.nngroup.com/articles/field-studies/> and <https://www.designkit.org/methods/immersion>
- A **Literature Review** is a summary of the available research on a specific topic. To learn more visit: The Literature Review: A Few Tips On Conducting It | Writing Advice. (n.d.). Retrieved June 8, 2021, from <https://advice.writing.utoronto.ca/types-of-writing/literature-review/>
- **Personas** are a summary of your key stakeholders and their goals, needs, and obstacles. Once they are created, they can be used to help create a journey map. To learn more, visit: <https://www.innovationtraining.org/create-personas-design-thinking/>
- A **Qualitative Survey** is a survey that asks open-ended questions to generate insights. To learn more about designing effective surveys, visit: <https://think.design/user-design-research/surveys/> for more information, visit: Tips for Creating Great Qualitative Surveys. (n.d.). Retrieved June 8, 2021, from <https://www.nngroup.com/articles/qualitative-surveys/>
- A **Research Guide** is a systematic way of writing and organizing these key aspects of the research process. To learn more, visit: https://sociology.fas.harvard.edu/files/sociology/files/interview_strategies.pdf
- **Thematic Analysis** involves analyzing qualitative data (ie. text from interviews, focus groups etc.) for patterns and themes. To learn more, visit: <https://www.interaction-design.org/literature/article/how-to-do-a-thematic-analysis-of-user-interviews>
- **Usability Testing** involves a researcher observing a user attempting to use a product or service. To learn more, visit: <https://www.interaction-design.org/literature/topics/usability-testing>
- A **Paper Prototype** is a method by which researchers create a paper-based model of a learning space environment to evaluate its design. To learn more, visit: <https://www.nngroup.com/articles/paper-prototyping/>

For more information about Transforming the Instructional Landscape,
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