

EDU 6004: Leading Experiential Learning & Teaching

Completed Experiential Plan

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Context Statement

I am the Manager of Youth Tinkering Programs at the Exploratorium, a science center/museum in San Francisco that first began in the 1960s, and run a longtime program partnership called Tinkering Afterschool between the museum and a few community-based organizations, among them the Boys & Girls Clubs and the YMCA. The program is a research-practice collaboration that works on three levels: 1) as a series of weekly workshops for elementary-aged youth around the tinkering/making pedagogies that the Explo had a large part in creating (it is very constructivist) in the afterschool space, 2) as a professional and leadership development program for early career educators / transitional age youth, who co-design activities and co-facilitate them and are themselves “alumni” of the programs, and 3) as part of a learning laboratory culture of the Exploratorium that investigates the dimensions of learning and on the different formats of education across both formal and informal contexts.

One way that I like to think about this program is that it involves myself and others bringing resources and largesse of the Exploratorium *out into the community*. Another program I run, XTech, involves youth *coming to the Exploratorium* from their own neighborhoods for a very different kind of program, though they often explore similar projects/activities. Both the setting and style of engagement are different between programs, which lends to some fundamental differences in what we investigate and how these experiences impact youth.

Needs & Purpose Statement

As mentioned in the Context portion, my program Tinkering Afterschool employs transitional age youth/adults as co-designers and -facilitators of the workshop sessions we bring to kids at the Clubhouses or community sites we are partnered with. This strand of the work spends a lot of time on reflection, on prototyping/R&D of the projects that we devise, and on planning out our facilitation. One of the topics that I regularly have my team reflect on are their own experiences or observations as students or learners (most of them are current high school or college students, so this is not difficult to elicit) stretching back into their elementary and afterschool days. Partly the reason for this is that the program seeks to research and design around considerations of equity, identity, and belonging, and we have worked to address the ways that formal classroom culture and schooling sometimes leave students out, especially those of minoritized backgrounds. These reflections are deeply ingrained in the work of the program and have informed much of the research and publications that the program has produced, as well as structures and practices. We refer to this group as 'near-peer mentors' and the group often moves into other departments of the museum as they reach professional and academic milestones. More veteran near-peer mentors provide support and guidance to new members of the facilitation team who have just made the jump from being strictly a learner/student in the program.

But one area that I have been wanting to improve are the ways that the actual elementary-aged youth deploy and develop agency in the program. The program supports drop-in style engagement, but encourages kids to remain consistent and keep attending since we explore and construct a wide range of projects and materials. Because of this, the near-peer mentors and I spend a fair amount of time thinking about pivots and new directions for our projects so that kids can have freedom and flexibility to steer their designs and thinking. Beyond that, though, kids are not really able to direct their own experiences (unless they remain in the program long enough to become a near-peer mentor). I would like to implement new aspects of the program that support the creative and leadership development of my mentors, while also inviting kids into the process of decision-making, so that the projects can more closely reflect their curricular or material interests, and to continue to grow the program in more progressive and inclusive ways. I think that there could be portions of Tinkering Afterschool's fiscal/programmatic timeline that could be situated to accomplish these things.

Your Project/Unit/Program Plan

There are a number of ways that I think together could help the program widen the field of decision-making so that students can be more involved and have their ideas privileged beyond just what they make from their projects. One of those ways is a tweak to an existing mechanism of the program, our debrief sessions, and two others are focused more on segments of the program timeline that could be implemented to allow for more expression and more feedback on how we proceed with our workshop sessions each semester.

Debrief sessions are parts of our program days that occur immediately after a workshop session with kids has ended; kids have left the room but their projects remain.

Conversations and reflections happen, first in writing within journals and then afterwards as discussion, that uplifts experiences, observations, successes, and areas that we want to address or investigate. We decide on adjustments to our activity, to the space, or to our plans for facilitation the next program day in these conversations. Sometimes, the program's partnered researchers or consultants shape the debrief sessions by posing questions they are specifically looking at (the role of materials in learning, how identity emerges, what notions of play look like, etc.), but most of the time the sessions are shaped by the central facilitation questions: "What happened? Who did you work with and how did the work unfold?" I would like to adapt this debrief idea with students, and form a sub-cohort of youth who have demonstrated concern and care for the program and setup a mid-semester check-in or other cadence of meeting so that this advocacy group can also give us their reflections in more direct ways. Several kids attend Tinkering Afterschool despite having readily observable distaste for DIY/making/construction, but ample amount of joy for the social dynamics and educational approaches of the space, so elevating their feedback and participation in this way would likely be well-received. It is also the case that several students continually rejoin the program semester after semester, and develop not just a deeper understanding of the projects and their abilities within them, but of the program itself and as a space with a culture of its own.

The other two ideas pivot around the ways we could integrate the in-progress aspects of tinkering and construction, for both students and the near-peer mentors, so that these processes can be more transparent and to support more pedagogical flexibility. Mentors and I usually present "finished" versions of the projects that we devise to students, carefully and strategically presenting them in piecemeal over several workshop days so they can be rich and alluring prompts for kids to make their own versions and to parse

through the elements of the craft methodology or of its origins and lineage culturally. Instead, I would like to spend time at the beginning of every new program/fiscal year with mentors presenting and showcasing their in-progress projects and “undercooked” curriculum to students: projects that showcase how they are thinking about tools or methodologies, or materials that they believe best demonstrate concepts or phenomena. Kids could then tussle with these artifacts and be involved in the looming and developing questions, and help guide their trajectory. Projects that don’t go forward as the focus of our explorations for the semester can be situated for development behind the scenes with the possibility of returning to the workshop space at a later time. This allows students to become privy to the kinds of thinking the mentors are engaged in, and to redistribute leadership so that ideas and attitudes can shift and emerge.

Lastly, implementing Open Make Days where students are able to choose from an array of materials and tools to make projects of their own design freely and openly would help free some capacity for the team when we are collectively strapped for time or energy (or when our programs are impacted heavily by scheduling shifts, such as during the holidays) but also allow us to more deeply engage with aspects of their design-thinking that are sometimes difficult to ascertain. Aesthetic preferences, pop culture references, design proclivities, relationships with tools or technology are all parts of our overall work that sometimes remain elusive or hidden as projects evolve, but could be more apparent and easier to engage with on these days where the goal is simply to create and investigate.

Connections to Deeper Learning Framework

In general, the work of Tinkering Afterschool and my personal pedagogy already attend to many of the characteristics and goals embedded within the Deeper Learning & Global Competencies Frameworks in a number of ways, and the proposed implementations and adaptations help to make these mechanisms much more pronounced. A simplistic way to gauge these practices is to look for the 6Cs, which are: character, citizenship, critical thinking, collaboration, and communication. These are all intended outcomes from learning experiences and what educators should seek to stoke from their audiences and learners, and make up the first layer of the framework. From there, deeper learning engages with design elements and gives amplification to the practices, partnerships, environments, and digital features of the overall work, and should align well within the many, many systems that these localized experiences are situated within on a larger scale whether it's towards formal schools or school districts, home life, or educational organizations as a whole that can include other afterschool spaces, tutoring, athletics, hobbies, etc. (Fullan et al, 2017).

By looking at those kinds of dynamics, encouragement of learners to bring their whole selves is much more likely to occur, leading to more experiential dimensions and ultimately more meaningful transformation. Because my work is situated in afterschool spaces and centers around informality, I often utilize my programs to address or respond to (and even to combat) the formats that traditional classrooms often operate within that have tended to harm students of minoritized backgrounds whether that's based on race, class, gender or orientation, or disability - like with the insistence on grades, homework, and evaluations as a form of assessment - and have found greater success in promoting learning by focusing on the dispositions and attitudes of youth and the shifts of their thinking and decision-making, instead of on the maturity, completion, or complexity of their work. This uplifts the processional quality of learning, and in the case of the in-progress projects mentors would showcase and facilitate, demonstrates that even educators and adults still require reflection and growth. This helps to make experiences more efficacious and more rewarding.

The combination of the three practices I aim to implement into my regular programming (student leaders/advocates cohort; in-progress project facilitation by near-peer mentors; Open Make Day sessions for low-stakes experimentation and construction) attend to the 6Cs in the following ways. By acknowledging the insight that youth have about their own experiences and ideas they might have towards the culture, space, and content of

Tinkering Afterschool and then to integrate them at various points throughout a semester helps to cultivate an active role as citizen and steward of the program, rather than simply as students or recipients of the thinking and planning. Veteran students sometimes display leadership skills of their own as they develop mastery with tools and support more novice students in the group, so to allocate these characteristics and traits with intention would help build on their critical thinking and collaboration as well, in roles that are formalized and imbued with agency.

Both the in-progress near-peer projects and Open Make Days work together to drive the communication around our projects so that their invisible elements of thinking can become visible. An example of this is when mentors decide to only include a slew of materials they think are critical for the success of the project, but often students request additional items based on their interests. This has tended to be a point of tension, because while we aim to cultivate a culture of abundance with materiality, it isn't always the case that we can provide an endless supply of pipe cleaners or felt sheets, or can include materials that are more specialized or are arguably distant from the materials deemed absolutely crucial for an exploration like stereo speaker- or automata-making or for building dioramas or paper circuits. Addressing these things overtly invites students into our line of thinking, and gives them a voice for contending with our choices so that they make sense and can be affirmed. These decisions can also be objected to by students within these impending practices, and the ensuing problem-solving and discussion around the pedagogies and facilitation choices of near-peer mentors builds more active engagement in these things as the fodder of the program in all the same ways as our activity guides / lesson plans and the physical artifacts.

The Six Cs

Creativity: Within the In-Progress Projects workshop sessions is the opportunity for near-peer mentors to think about activity design on a different scale of problem-solving. By winnowing the scale to ideas that are encouraged to be half-baked or "incomplete," the ideas or connections that empower them can show through more unfiltered. This could be as a partially-made example or incomplete set of them, as part of the presentation and prompt bolstered by their facilitation, or on the set of tools or materials with dynamics rich for deconstructing. The snack size of these projects makes engaging with them snappy, with sometimes little loss of delight or learning value. They can invite conversation in ways that serve their purpose if incorporated into the program formally and expanded upon intentionally. And by engaging as much in the social dimensions of the explorations, however small they might be, this invites mentors to exert an

“entrepreneurial eye” as Fullan et al use to describe this global competency (2018), in the pursuit of finding the core relevance of their ideas for our tinkering spaces.

Critical Thinking: The adopted practice in my experiential plan that most attends to critical thinking skills is the iteration embedded in the student advocacy cohort. Because this new strand is based on interest and demonstrated enthusiasm for the program, it allows for youth who have developed co-ownership and agency within the program to be able to help steer it to better address challenges or shifts perceived at all levels. This is the basis for a culture of learning, and this helps to acknowledge the value of the ideas and insights that youth bring to the work, and formally views them in new forms of light that can contribute to illuminating more ways for involvement.

Communication: An area that I would like to think about more is in how to best engage in reflective practices or activities at the end of the Open Make Days, where the only real prompt is to combine materials in ways that seem interesting. I have particular hopes for this area to reveal which tools or materials youth are drawn to, and which they feel deterred from using or interacting with, and for personal connections or prior knowledge to emerge. What has not been solidified are the ways reflections and shareouts would look like to ensure this is an enjoyable activity for youth and rich with information and insight for everyone, and how those mechanisms around communication would work for these insights to be shared. Communication is a strong feature in the student advocacy cohort plan, however, and is a large part about what the work will involve to achieve deeper learning and co-ownership of the program.

Character: Aspects of character and providing space for authenticity, for innovation and cleverness, and for joy are strongly present in each of the adopted practices for this experiential plan. Fullan et al contextualize this trait as being, “the ability to make learning an integral part of living” (p27) and this empowers the relationship- and dynamic-building efforts that empower each of the three new modes and interactions.

Citizenship: Similar to Critical Thinking, students who join the Advocacy Cohort will be able to practice their discussion and communication skills to bring visibility to issues of participation, attendance, and design of the program through negotiation of their personal worldviews and those that represent the shared interests of the program and their specific Clubhouse contexts, since they vary from site to site and community partner to community partner. One advancement the program could make in this way later after the initial implementation plan, is to invite Student Advocacy Cohorts from different sites to meet with one another - even virtually - to learn about how the program has shifted to

meet their unique needs and contexts. Done intentionally, this can surface questions of human and resource sustainability in these partnerships to potentially address other issues or challenges even outside of the program but which impact its various components.

Collaboration: Already well-represented in the Tinkering Afterschool program, the adopted practices for experiential learning help to broaden the scope of the inquiry process embedded in mechanisms like the debrief sessions and R&D process with mentors that reinforce the other practices and routines of the program.

Project, Unit, or Program Timeline

- **September:** Kickoff of Program Year / Open Make Day: students are presented a range of materials and tools that correlate to and reflect those that the near-peer mentors and other program staff are considering for their projects and for the year. Students are welcomed to construct anything from the available array of items and staff are encouraged to enjoy conversations with students and dig deep into their sets of prior knowledge, personal connections, experiences, and anecdotes. These can be shared during debrief and the process of addressing the input can begin.
- **Early October:** Program Staff present the In-Progress Projects over a handful of workshop days: sharing with kids what they are thinking about and vying for with their designs and choices around materials, etc. Researchers can record and observe interactions students have with projects and report their findings during debrief sessions.
- **Mid-to-Late October:** Program staff and students vote on projects they wish to move forward with, team begins work to transition into R&D around selected projects. Those not selected will be assigned to near-peer mentor sub-cohorts for continued investigation and prototyping outside of workshop time.
- **Late-October:** Students asked to join Decision-Guiding Subgroup: based on observations of which students might enjoy and grow within the subgroup and based on recommendations by Clubhouse or Community Org staff, students will begin receiving invitations to join and to help steer projects at milestone moments in the program year, but especially at the end of each semester.
- **November:** Selected project work begins: staff are now focused on one project and all related topics and tools to it, students are in their design phases or early construction phases.
- **December:** Showcase Day for program: in-progress or completed projects are shared with wider Clubhouse community and families/guardians of students. Student-led Decision-Guiding Subgroup fielded for responses to questions and for feedback.

- **January:** Preparatory Month: Program staff are devising next set of workshop sessions, finding ways to extend projects if they are continuing from fall semester (or planning and R&D around next projects if fall semester projects were completed).
- **February-March:** in-progress projects that were not initially selected at Kickoff / October are being R&D'd prototyped by near-peer mentors, and brought to kids in workshop spaces as needed or based on readiness.
- **April:** Showcase Day for program: in-progress or completed projects are shared with wider Clubhouse community and families/guardians of students. Student-led Decision-Guiding Subgroup fielded for responses to questions and for feedback.
- **May-August:** Summer sessions; near-peer mentor staff "graduate" to next level, new mentors are taken on and onboarded from pool of students; training sessions involve mentors devising next set of projects.

Implementation Plan & Stakeholder Feedback Cycle

Implementation Plan

Based on the Tinkering Afterschool program calendar above and the usual segments of our fiscal/academic year, the implementation plan relies on three different sets of conversations. The first is in generating buy-in from the Exploratorium's internal team at the top level, including my direct supervisor and other members of the Tinkering Studio department which houses the program and is the originator of the tinkering pedagogy that we exert and co-create. This is to establish a helpful cycle of testing and observing how these new experiential practices not only enrich the program, but also allow us to finesse and shape the dimensions of this pedagogy that defines each of the programs within the department and which relate to deliverables of this collective research.

The next conversations will need to involve near-peer mentors, both returning and incoming, as this group will be largely responsible with the implementation of these plans on the ground floor. Higher level program staff will need to devise the Research & Development / Training sessions for the mentors in the weeks we plan to explore In-Progress Projects, and then in the presentation of them with youth during the kickoff weeks of the program in Clubhouse settings. Ensuring communication about the intent and goals of this pivot is critical, as well as time after the "incomplete" projects have been produced so that crafting of a facilitation plan and space for mentors to address the needs of the program can be included in their individual workplans. A challenge that exists within these conversations is how to ensure that mentors - who will be uplifted as

learners in these moments - will also still be supported as co-facilitators during these sessions so that the experience is productive on both levels.

Lastly, and especially with implementing the plan around student advocacy groups, are the conversations that will need to occur with Clubhouse staff / community partners. Beginning first with celebrations of the motivators for this particular new and adopted practice, that students have demonstrated consistently a desire to help steer the projects we focus on and how we welcome new and returning students, this will hopefully help build the buy-in so that Clubhouse staff can support the work and discussions these cohorts will need to engage in outside of the time that the Exploratorium internal program staff are physically present in these community spaces. Next, working to identify the number, duration, and pre-selected topics for these meetings/discussions Clubhouse staff will have with youth, and that internal program staff will have with everyone at less frequent meetings, will be critical to ensuring that the baseline of effort is made while acknowledging and respecting the limitations.

Stakeholder Feedback & Plan Revisions

Tinkering Afterschool is currently inbetween semester-long program sessions, and is not yet engaging with students. Because planning and onboarding are also happening in preparation for the launch of the semester, near-peer mentors are also not yet actively involved; however, the program supports two Program Lead positions within the pool of mentors who do work and support the program year-round.

I began with the implementation of these experiential practices by presenting these ideas to my direct supervisor, who generally does not participate in-person at the community sites and instead supports Tinkering Afterschool on an administrative and fiscal level. He also leads professional development for the department that the program is housed within, the Tinkering Studio, and is a key stakeholder in the advancement and shaping of the overall tinkering pedagogy along with the department's directors. His response to the three adopted practices involved the following:

Student Advocacy Cohort: My supervisor was most hesitant and uncertain about the implementation of this idea between the three that are represented in this plan. Though agreement abounds on the justification and aspirations for this new strand of work, concern about the capacity on the community partner side to ensure these newly-formed groups feels suitably, needfully, and satisfyingly engaged is not guaranteed, and if done

uncarefully could even harm youth connections to the program and the notion of leadership. Our revision to this plan for successful implementation involves sparking conversations through this academic/program year so that we can pivot around noted and observed enthusiasm from students, perhaps in our of mid-semester or mid-year check-ins, and to begin to shape what these advocacy meetings and execution plans can look like from there, also taking into consideration the capacity of their staff that would likely vary between each of the partnered sites.

Open Make Sessions: I have spoken about this adopted strand of work with both my supervisor and with community partners in separate conversations, and already the plan is readying for execution in this upcoming semester of the afterschool program. Though thinking will need to continue with near-peer mentors once they have been recruited into working this semester, and during our training and R&D sessions, excitement from the partners is already high. The implementation plan includes holding these Open Make sessions during “inbetween” sessions where one project has been completed and a new one has not yet been introduced and prompted. This helps to relieve some capacity for all of the facilitation team, and allows students some breathing room to simply enjoy a creative session of making and constructing without having to consider deadlines, personal goals for outcomes, or even an idea for what to make or how to spend their time. Our first Open Make session will be held in December as all groups transition into holiday breaks. Near-peer mentors are being onboarded now, and we will be exploring the possibilities and needs for these sessions soon after we begin preparations for the semester as a team.

In-Progress Projects: Similar to the Open Make sessions, this idea was met with immediate excitement and understanding for the justification of this new strand of work. My direct supervisor found this to be a clever and innovative way to address our program’s budgetary limitations, and helps to make professional development more ongoing than otherwise, because physical artifacts of mentors’ thinking about projects, facilitation, and all of the connective dimensions therein remain even when the plan pivots into bringing other projects to youth and community partners. One consideration that has yet to reach fruition is that around storage of these projects, especially if they take on complexity or size, but the Tinkering Studio department has already pledged to help support this work by making the public-facing Cabinets of Curiosity available for us to exhibitize these projects so that visitors to the museum can see the way our pedagogy looks in real world settings like those at Clubhouses. Having this internal buy-in from the

entirety of the department has been crucial in our efforts to make the program team also feel welcomed and belonging within the department, since colleagues often are focused on programs or projects of their own despite all being employed by the same department in the science center.

Reflection on Overall Feedback Cycle

Having already engaged in a variety of conversations with various stakeholders has compelled me to begin a process of capturing how the implementation for these experiential practices unfolds, and my hope is to present this plan and the outcomes at the very least to any number of internal meetings that the Exploratorium holds to share work across departments. This may help us to identify best practices that could be applicable to other programs or departments, and perhaps to generate more buy-in and/or stakeholders who can be involved. The Exploratorium employs a number of in-house scientists and artists as well as a series of successive artists- and scientists-in-residence who can be brought on as “consultants” within our programs and Memorandums of Understanding with community partners to share their work (as In-Progress Projects, or as guests in the student advocacy groups where applicable) that can help add additional dimensions of praxis and methodology to our overall scope. Additionally, my hope is to pursue presenting these ideas as reflective presentations at any of a number of conferences that the program regularly attends, like MakerEd or those by the Association of Science and Technology Centers (ASTC).

Resources and Support Needed to “Make it Happen”

While implementing these changes would likely be backed by most of the near-peer mentors as their own capacities and interests are a primary motivator, generating buy-in from Clubhouse/Community Org staff is crucial. The program’s researchers and I usually have weekly phonecalls with partner staff as a critical communication mechanism on movement and needs of the program, but adopting a student-led Decision-Guiding Subgroup would certainly need some additional support and work to ensure that students are given what they need to express their advocacy and to have their ideas and perspectives properly implemented.

Additional professional development work is also needed to ensure that conversations and dynamics between students and near-peer mentors aligns effectively to these programmatic shifts.

What you will collect to serve as evidence of achieving your goals.

<i>Outcomes</i>	<i>Evidence</i>	<i>Tool</i>
Students will gain experience in key decision-making and pedagogical processes / Students will feel more involved and have more agency in the program	Higher forms of engagement and creative expression both among students and near-peer mentors; improved consistency and attendance.	Observations & Debriefs
Students will engage more consistently in the program and aid in generating buy-in amongst peers and within their families/networks	Tinkering Afterschool relies on a recruitment strategy of word of mouth and tabling sessions at community/public events within the Exploratorium and within the Clubhouse sites of community partners. Though encouragement of youth to bring friends and classmates is made regularly, observing how this composes program attendance over time and the relationality between students can be tracked to include these insights and motivations towards the program.	Semester over semester attendance, tracked through rosters and sign-in sheets as needed through the program's funders, the SF Dept. of Children, Youth, & their Families (DCYF)
Improved capacity for program staff	More social dynamics and wider range of redistributed leadership amongst near-peer mentors and students. Commentaries in debrief sessions reflecting stronger connections to our pedagogy.	Observations & Debriefs
Near-peer mentors will improve in their practice and pedagogy of education	Mentors will be able to speak more confidently and personally on their approaches to education and learning, and will be able to discuss theoretical frameworks that compose the program and Exploratorium	Self-reflections, shareout documentation, debriefs

References

Fullan, M., Quinn, J., & McEachen, J. (2018). *Deep learning: Engage the world change the world*. Corwin.