Tactics for Collaboration Across and Within Disciplines

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While the architectural design process may be led by a figurehead architect, contemporary buildings are the result of vast teams of designers, engineers, and builders. They are furthermore influenced by social issues, local policy, and clients. Yet typical American architectural design pedagogy centers around design studios where students work individually on creative projects. This pedagogical style reinforces a fallacy of the genius architect, the heroic designer who designs and creates in a vacuum. This paper and presentation showcases a seminar designed specifically to subvert this paradigm and provide targeted collaboration skills and support to students as they work on inter- and intra-disciplinary teams on a creative project.

Taught collaboratively between Northeastern University's School of Architecture and New York University's Tisch School of Dance, this course takes inspiration from historical collaborations between prominent experimental dancers and designers like Anna and Lawrence Halprin; Merce Cunningham, John Cage and a variety of designers; and others.

During the first six weeks of the semester, architects and dancers prepare within their own disciplinary cohorts for collaboration. Architects learn from case studies in contemporary dance and set design; they learn hand drawing and sketching skills for quick ways of expressing their ideas; and finally they read, complete exercises from and discuss Collaborative Intelligence: Thinking with People Who Think Differently, by Dawna Markova and Angie McArthur. Dancers also read this book.

Following this preparatory period, architecture students are paired based on skill areas, interests and working styles discovered through the workshop. Then, architect pairs and dancers exchange portfolios of work before meeting remotely for a "speed-dating" style zoom session after which they rank their preferred collaborators. Teams are

thus formed and the long distance collaboration between architect pairs and dancers begins.

Together, architect-dancer teams envision and prototype a public performance through remote collaboration. Students draw from the methods in *Collaborative Intelligence* to address conflicts. Through this process, architecture students experience at a small but real scale the architectural design and delivery process from conceptual development to project completion with a focus on building collaboration tactics.

CURRICULUM FOR COLLABORATION

While the architectural design process may be led by a figurehead architect, contemporary buildings are the result of collaborations amongst vast teams of designers, engineers, and builders. They are furthermore influenced by social issues, local policy, and client desires. Yet typical American architectural design pedagogy ignores the collaborative nature of the profession and centers around design studios where students work individually on creative projects. This pedagogical style reinforces a fallacy of the genius architect, the heroic designer who designs and creates in a vacuum. This paper showcases a seminar designed specifically to subvert this paradigm by providing targeted collaboration skills and support to students as they work on inter- and intra-disciplinary teams on a creative project.

Taught collaboratively between Northeastern University's School of Architecture (NEU) in a course led by Associate Teaching Professor Mary Hale, and New York University's Tisch School of Dance (NYU) in a course led by Arts Professor Cari Ann Shim Sham, architecture students were provided a unique opportunity to engage in a real-world project where they would be responsible not only for partnering with a dancer on the creative vision of a performance but also for building prototypes of set pieces for this performance. In so doing, architecture students experienced a taste of the architectural project delivery process: working collaboratively on a design team from concept development to delivery of a physical artifact in partnership with and with accountability to a client figure, represented by their dancer collaborator.

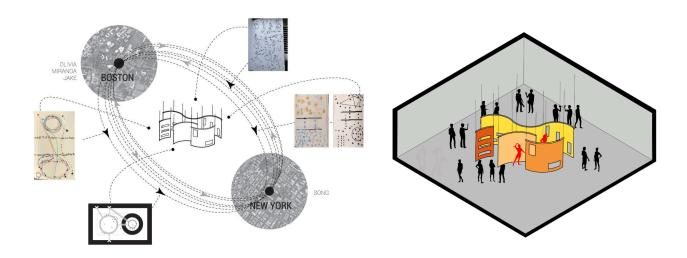


Figure 1. Student diagram of remote collaboration process (left) and resulting design (right). Image credit: Jake Okrent, Olivia Ouellette, Miranda Hazoury, Song Khwanphulsri

Dancers and architects have much to offer each other. Afterall, architects are choreographers of sorts, shaping the spaces through which movement occurs. They design the containers and the stages for human movement and interaction. Choreographers design movement within space. It is therefore unsurprising that many historical precedents for collaboration between architects and dancers exist. This course particularly draws inspiration from work by and/or collaborations between contemporary figures such as: Anna and Lawrence Halprin; Merce Cunningham, John Cage and a variety of designers; and William Forsythe. Students are introduced to these practices, in addition to architectural theoretical texts, during a six-week orientation period designed to attune students' minds to movement as a key design parameter.

Beginning with the iconic collaboration between Lawrence Halprin, a Harvard trained landscape architect, and his wife Anna Halprin, a progenitor of post-modern dance, students learn about a very direct transfer of disciplinary considerations between choreography and architecture. The Halprins' collaboration is well described by Alison B. Hirsch in her essay, "The Collective Creativity of Anna and Lawrence Halprin":

"During the 1960s, a progressive liberation of the spectator from observer to active participant occurred in the visual and performing arts, which were reciprocally informed by participatory forms of social protest and performance: marches, sit-ins, riots, and so on. Dancer and choreographer Anna Halprin (née Ann Schuman, 1920–), with her San Francisco Dancers' Workshop, was directly involved in these developments, and their experiments soon infiltrated the creative endeavors of her husband, landscape architect Lawrence Halprin (1916–2009). Like "happenings," emerging from the teachings of musician John Cage in New York, Anna organized interactive events in which environmental situations and loose action

guidelines were proposed or "scored," but the ultimate performance was left open-ended and typically involved the audience. From these new art forms, the "open score" became the major tool for stimulating action and involving the public. Lawrence (Larry) Halprin applied these emerging performance theories to his work by designing public spaces as "scores" intended to stimulate open-ended kinesthetic response, and by adopting the temporal-situational guidelines of performance events to structure public design workshops, which he called the Take Part Process." ¹

The "open score" becomes an instrument in both Lawrence Halprin's and Anna Halprin's respective practices. Lawrence Halprin defines scores as "symbolizations of processes which extend over time. The most familiar kind of 'score' is a musical one, but [he has] extended this meaning to include 'scores' in all fields of human endeavor. Even a grocery list or a calendar, for example, are scores." ²

Examples of scores developed by Lawrence Halprin to aid in his design practice proliferate through his iconic book, *The RSVP Cycles*, which students read and study. They learn to read Halprin's diagrammatic scores as scripts for movement and ultimately as form generators. This is especially evident in Halprin's design for the Ira Keller Forecourt Fountain in Portland Oregon, where the score generates a landscape design that is participatory, surprising and engaging for those experiencing this built work.

As a counterpoint to the work of Anna and Lawrence Halprin, students are also introduced to the practices of another dancer and choreographer from the same era, Merce Cunningham. Where Anna Halprin's work is directly connected to human emotion, experience and social issues, Merce Cunningham's is formal and cerebral. Rather than engaging with the human

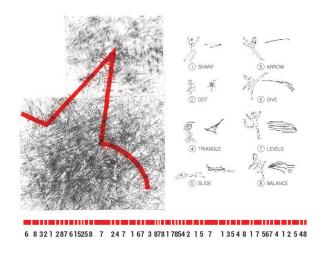


Figure 2.Student created score for movement. Image credit Jake Okrent, Olivia Ouellette, Miranda Hazoury, Song Khwanphulsri

condition, Cunningham experiments with chance as a driver of choreography and performance. Cunningham famously uses an algorithmic process for constructing his dances. He would create a list of movement phrases that he might wish to include in a dance, and then by a random process combine these movements. Surprising juxtapositions would occur. At times, even the best dancers could not transition from one movement to another, as the transition defied physical principles. The results of his process were fascinating and eventually led to his renown in choreography after initially alienating traditional dance audiences. ³

Cunningham's work grew in collaboration with his partner, the experimental composer John Cage, who was also famously interested in chance operations in his own creative production.⁴ To heighten their experimentation with chance they would agree to key structural ideas in a performance, such as a certain length of performance with a certain number of stages, and then they would work independently from each other, and often independently from a set designer, bringing the various pieces together at the performance itself. ⁵ Only then would the dancers encounter the musical score and set design, adding another opportunity for chance in the staging of the performance.

Merce Cunningham collaborated with a number of significant architects and artists on sets over decades of practice, and students are introduced to a handful of these. ⁶ However, we also extend our study to the architecture practices that have engaged with similar principles such as Peter Eisenman's approach to autonomy in architecture where architectural elements like walls, floors, and ceilings, lose their meaning and can be arranged like playing cards into three dimensional constructions. ⁷

In addition to these key references, students are finally introduced to the work of contemporary, internationally acclaimed choreographer William Forsythe, whose work crosses disciplinary boundaries from dance to installation art. Forsythe choreographed dance, most significantly for the Ballet Frankfurt (1984 - 2004) and also for his own company, The Forsythe Company; however over the last fifteen years, Forsythe bridged his choreographic practice to architecture and design through his "choreographic objects", interactive sculptures that move or engage others to move in surprising and thought-provoking ways. ⁸ These works provide a lens through which architecture students can directly consider the way design influences movement.

In addition to these case studies, students read texts from architectural discourse that deal with ideas of movement and its relationship to form-making. Bernard Tschumi's "Parc de la Villette, Fireworks, 1992: Cities of Pleasure" ⁹ and his design for La Parc de La Villette in Paris, ¹⁰ provide clues into how architectural drawing and analytical techniques can be used to study movement and ultimately create form. Stan Allen's essay "Field Conditions" ¹¹ provides yet another point of reference for translating movement into form.

These first six weeks of the semester quickly tune architecture students into considerations of movement in architectural design, and also to the relationships between choreography and architecture. Additionally, during this time architecture students prepare for collaboration by reading, completing exercises from and discussing *Collaborative Intelligence: Thinking with People Who Think Differently.* ¹² This book helps students first identify their own thinking talents and blind spots, then learn strategies for identifying the thinking talents and blind spots of their collaborators, and finally deal productively with potential conflicts that arise from these differences. Dancers also read this book while preparing in their own cohort, so that all students come into their collaboration with a common ground on approaches to collaborative thinking.

Because there were more students in the architecture class than in the dance class, the final step in preparing for collaboration with dancers was to pair architecture students with each other. Rather than allowing students to choose their own partners, they were paired based on responses to a survey in which they answered questions about their proclivities [eg, If you had to be one of these choreographers, who would you be? (a) Anna Halprin, (b) Merce Cunningham, (c) William Forsythe], skills they bring to the collaboration, skills they hope to develop through the collaboration, and thinking and communication styles identified through completing exercises in Collaborative Intelligence. Their professor then proposed the pairings to students based on what appeared to be complementary interests, skills and thinking talents. Students were eager to work with their assigned partners and ready to begin their collaboration and meet the dancers.



Figure 3. Outtakes from student performance: Women's Place in Society. Image credit Soha Mohammed-Eltaher, Amera Youssef, Da Hyun Kim (project team) Dana Murtada (photographer)

In advance of their first meeting, architecture student teams and dancers exchanged documentation of their creative work. Dancers shared artist statements and reels of dance performances that they felt best exemplified their interests. Architecture students provided portfolios that best showcased their own skills and interests. After reviewing this material, the architecture students and dancers met for the first time over zoom during class. They joined break-out rooms and shifted every ten minutes, in a fashion similar to speed dating. After this, architecture teams and dancers ranked their preferred partners, and the professors then paired the interdisciplinary teams based on this input.

Northeastern's School of Architecture and the NYU's School of Dance exist in remote cities, made even more remote due to the ongoing global covid pandemic; while the architecture students would meet together in person, they collaborated with their dancer partners via video conference. Teams met virtually on a weekly basis to discuss ideas and present progress toward milestone goals. During the initial part of the collaboration teams decided together on a public performance project concept that they would build. This portion of the collaboration, which may have been the most fraught, was fairly seamless. This was perhaps due in part to the pairing process which

prioritized shared interests for the interdisciplinary collaboration. This may also have been abetted by the conflict mitigation strategies students learned from *Collaborative Intelligence*.

Architecture students then used class time in between weekly team meetings to workshop their ideas and receive critical feedback from classmates and instructors. This process allowed the teams to work towards the midterm review, where each team presented a formalized proposal and prototyping exercise to professors and outside critics. While each project had its own representational needs, students were generally required to provide the following deliverables for the midterm presentation including a concept statement, iconic renderings of the project from the audience point-of-view, additional renderings as needed, architectural drawings (plan, section and axonometric) showing the relationship between the dancer, audience and designed objects; physical prototype experiments showing a component of the projects, materials studies, connection details and scale studies; a reflection statement detailing the collaborative process; a proposal for how to develop the project further; and finally, goals for what the team would accomplish by the end of the semester.

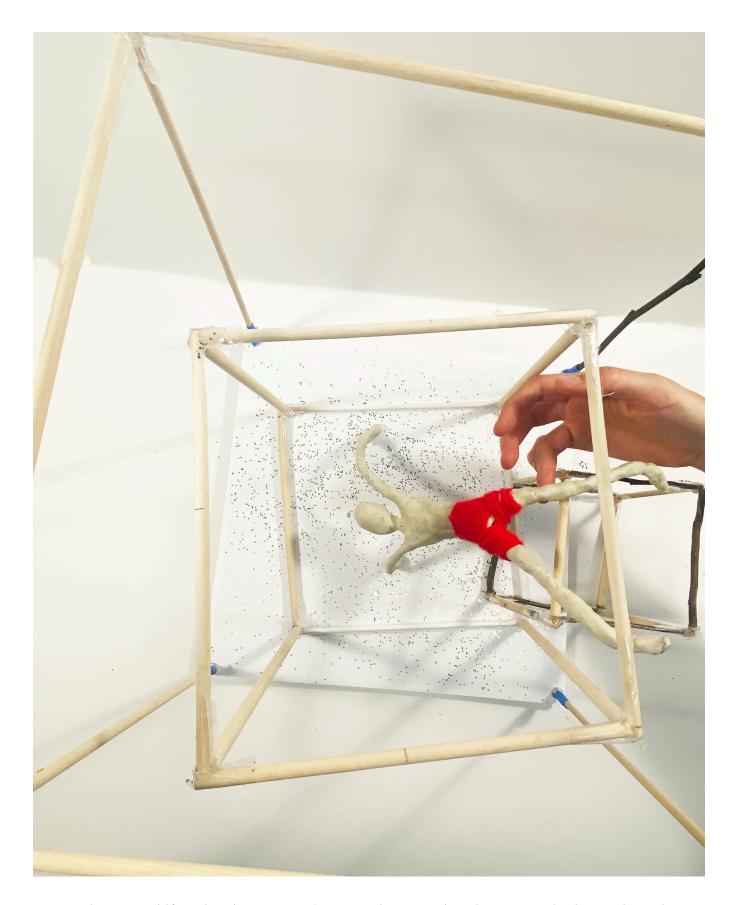


Figure 4. Early process model for students designing *On Display*. Image credit Cristina Rodero Sales, Dana Murtada, Jake Gansenberg, Colson Lynn

Through critique, students received the feedback necessary to further develop their projects and move towards a prototype performance with full-scale set pieces by the end of the semester. During the remaining weeks of the semester, the architecture students refined their designs and then built full-scale set pieces. These pieces were required to be disassembled, so that they could be packed into a car and driven from Boston to New York City at the end of the semester.

As the end of the semester neared, architecture students were required to present their final set pieces in class. They were encouraged to develop a performance with the set pieces, so that the class could imagine how they would eventually be used by the dancer collaborator. Students were also required to complete assembly diagrams so that the dancers would be able to seamlessly deploy the prototypes and continue to develop their dance performances.

The collaborations resulted in five distinct projects, each of which reflected the unique interests of the teams.

Women's Place in Society was conceived and created by Da Hyun Kim (NYU), Soha Mohammed-Eltaher (NEU) and Amera Youssef (NEU), a team of students from Egypt and South Korea. The students wished to explore their cultural identities and gender through the project. As students described in their unpublished project description:

"In both Korean and Egyptian culture, women are categorized to play a specific role in society: clean the house, cook, raise kids, be obedient... Through our collaboration, we present [how we believe that] society views women [and] the way [we believe that] women should be viewed: as equal. Through spray-painted transparent fabric panels, we confront the audience with a large-scale stencil that represents a female role, some negative and some positive. As the audience roams around the non-linear placement of the stencils, reflecting on the [imagery], they are each given a cup of water. The dancer, dressed in white, dances through and around the panels, [and] the audience is invited to throw the water at her, allowing her color to transform [through water soluble dyes embedded in her costume] and [intensify] with each new hit of water. At the end, she then reveals the leftover marks as she sheds the stained dress."

Another project, Conceal / Reveal, by Miranda Hazoury (NEU), Jake Okrent (NEU), Olivia Ouellette (NEU) and Song Ravinan (NYU), took inspiration from observations about architecture's role in concealing or revealing the private narratives taking place on the interiors of buildings. Students explored an abstraction of the moments where un-curtained windows or open doors reveal a glimpse into the interior life of an otherwise opaque architecture. The students wished to create a similar environmental set for dance and performance. Working

with custom fabric drapes, which could be hung in a variety of configurations that the architects illustrated through diagrams, the dance would take place on the interior, giving the audience peaks of the movement through windows, openings, shadows and movement registered on the drapes.

Imperfect, by Sarah Bricker (NYU), Maria Hirabayashi (NEU) and Jackson Spicer (NEU), illustrated these students' reflections on the emotional impact of the pandemic. The students considered themselves to have been emotionally shattered during this time and felt they were in the process of re-building their self-image and ways of relating to the world. Using mirrors, lighting and large set pieces that during the performance could be moved and stacked into a totem, students attempted to create a performance that captured their sense of a fragmented and fractured identity, the introspective process of re-emerging into the world, and the process of rebuilding themselves and their connections to others.

Similarly, *On Display* by Jake Gansenberg (NEU), Colson Lynn (NYU), Dana Murtada (NEU) and Cristina Rodero Sales (NEU) used architectural set pieces as a way to amplify a performance about personal identity. The architects created cubic frames of three different scales inside of which the dancer could perform. Each box influenced movement in a different way, where the larger cube provided the most space for free movement, and the medium and smaller cubes constrained movement. This project was meant to be playful, and the set pieces were reconfigurable. The project was heavily inspired by the athleticism of the dancer, who hoped for an eventual version of the project that he could climb and perform acrobatically within.

Finally, Dance Isn't Always Pretty by Suzy Acquisto (NYU), Sharmeen Khan (NEU) and Amelia Shelton (NEU) explored and presented the psychology of the dancer through an immersive installation. This group considered the performance to be the audience's interaction with the installation and their goal was to highlight a darker, messier internal struggle hiding behind the dancer's attempt to create a perfect performance. The group used sound design, imagery and mirrors, as well as a constructed pathway through the installation to bring the audience into the mind of a dancer preparing for performance. In the students' unpublished words describing the stages of the installation:

"The perimeter is semipermeable and on the outside you see the image of a red velvet curtain. From there an audience member enters the experience to feel the excitement of embarking on a new journey. They are quickly met with the dark side of the art form as they move through the installation hearing sound bites of actual feedback given to working professional dancers all while staring at themselves in mirrors at multiple angles. When they feel ready to continue the audience finds themselves surrounded by the joy, release and exhale of a performance. From there

they must make the choice to exit or go through the experience again."

Before breaking down set pieces and sending them to their dancer-collaborators, architecture students presented a version of the performance to their classmates in the dance studios at Northeastern University. This provided a rare opportunity for the designer to interact and perform with their designs before handing them over for use by the performers. Following this performance, students made final modifications to their set pieces, completed assembly diagrams, and packed their projects into the back of an SUV to be transported. Once the set pieces were delivered to NYU, dancer collaborators could finally see and experience the set pieces in person. Architecture students had the opportunity to receive feedback from dancers on the quality of the prototypes. Many of the student groups made plans to further develop the performance following the semester's end.

To finalize their learning, architecture students created a book that documented their work through the semester and included a reflection statement summarizing the successes and challenges of their collaborative process and how, based on this experience, they might approach collaboration in the future.

CONCLUSION

Overall this pedagogical experiment was successful in the following ways. All students successfully met course requirements, completing set-design prototypes and performances by the end of the semester. The majority of students reported a positive experience collaborating with each other. All students reported that *Collaborative Intelligence: thinking with people who think differently* provided a useful frame of reference and tactics for approaching collaboration and addressing conflict.

In the majority of cases, the dynamic between architect teams and dancers was excellent. While this is partly attributable to a common repertoire of collaboration tactics, this may also partly be due to the way the teams were formed. As described above, architecture students were paired by their professor, based on a variety of criteria including their self-identified thinking talents and blindspots, their skills and their interests. This pairing was intentional and may have staged better collaborative experiences than if students had formed teams on their own. While the method followed for forming teams may not mimic many real world scenarios, it nonetheless provided an opportunity for students to learn about collaborative practice without undue friction. In a future version of this workshop, it may be worthwhile to form teams at random and understand how that may impact the outcomes. Could the tactics provided by Collaborative Intelligence be enough to support any pairing?

As for the collaboration between the architecture students and dancers, the interdisciplinary teams were truly working on the project together with a mutual end goal. This mimicked

the collaborative relationship that an architect may have with the best possible client who shares in the vision. None of the dancer collaborators proved to be a "difficult" partner or cli-



Figure 5. Still from *Dance Isn't Always Pretty*. Image credit: Sharmeen Kahn, J. Amelia Shelton, Suzy Acquisto

ent, and none of them saw themselves as the creative leader of the project; they were creative partners with the designers. A less optimal scenario, where the client and architect have misaligned visions or goals, is common in practice but did not rise to the surface in this workshop.

The rare conflicts that arose between team members were mostly addressed by the teams themselves without intervention from the instructor. There was one exception where a team member was simply not prioritizing the work of the course as much as her collaborators and left her teammates feeling disappointed and frustrated. This scenario required intervention and mediation by the professor. In general, however, students took pride in their work and in their collaborations. A couple of the groups even made plans to continue their collaborations after the culmination of the workshop. I personally have put the lessons from Collaborative Intelligence to task on collaborations in my life, from professional projects to child rearing. The perspectives and tactics provided by this book prove endlessly useful. However, for these tactics to become habits, one must commit to reviewing the strategies from time to time and not fall back into less successful, previously habituated paths of least resistance. It is not possible to ensure that students will do this; however, a way forward has been presented and tested with success through this workshop.

ENDNOTES

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