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Soft skills with teeth: Creating authentic learning environments with charismatic mega-projects

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Abstract

In every industry, effective teams depend upon a collection of non-technical competencies often described as soft skills: leadership, verbal and written communication, collaboration, analytical thinking, creativity, decision-making, problem-solving, and flexibility. Though the importance of soft skills is widely acknowledged, soft skills curricula are either non-existent or underdeveloped in most universities. This soft skills training gap leaves students under-prepared and often over-confident as they enter the workforce. In response to this gap in our department at The University of Texas at Austin, we defined and implemented an emergent, project-based pedagogical framework to recruit an interdisciplinary roster of students and deliver relevant soft skills training. Using “agile” methodologies within a student-derived, flat organizational structure, our students rapidly developed essential soft skills while engaged with an ambitious and high-risk project to design and build three performance-ready velociraptor dinosaur suits. We discuss lessons learned, alongside successes, to help others develop similar frameworks to close soft skill gaps within higher education curricula regardless of discipline.

Keywords: education; project based learning; authentic learning; team teaching; emergent pedagogy; soft skills

1. Introduction — What is a university for?

Students enroll in college for many different reasons, but as 85 percent reported in 2016 (Eagan et al., 2016) the goal for most entering freshmen is to just get through it so they can finally join the real-world and get a job. Most students in the United States have been acculturated to an academic cycle in which they consume, absorb, and regurgitate knowledge to reach each new level of achievement. Successful students expend tremendous effort to keep a high GPA and achieve a near-perfect SAT score so they can eventually grab, what Tony Wagner and Ted Dintersmith call in their book Most Likely to Succeed, “the gold ring” of a college degree (2016) and be ushered into the real-world to seek a job in the industry of their choosing. But according to a study conducted by AfterCollege, some 83 percent do not land that first job before graduation, or even months afterwards (Rutt, 2014). They may have excelled at everything asked of them by their schools only to discover that they are still not ready for the real world. Employers, correspondingly, find that qualified entry level employees are increasingly difficult to find (Stewart, Wall, & Marciniiec, 2016). How could graduates, who have studied hard, taken the right classes, and maintained a high GPA, end up so mismatched for the workforce?
Annmarie Neal, former chief talent officer at Cisco Systems describes the student/workforce mismatch very starkly: “The students that thrive within today’s education systems are achievement driven, rule oriented, compliant, linear, singular in focus. The world of work today requires future leaders to be relationship or collaboration driven, rule-defining, creative and innovative, lateral and polymathic in focus. The gap is huge and, sadly, I see only a few progressive schools really stepping up to the transformation required to match that of our businesses” (Wagner & Dintersmith, 2016). The latter skills mentioned by Neal – collaboration, creativity, lateral thinking, polymathic skills – are some of the “soft skills” that employers are seeking, but not finding, in recent graduates. Education in the United States has been finely tuned to consistently deliver knowledge-based “hard skills.” Though the importance of soft skills is widely acknowledged, curricula to develop soft skills are either non-existent or underdeveloped in most universities (Hart Research Associates, 2015; Irvine, 2011; Stewart et al., 2016).

Worse, this soft skills gap leaves many students not only under-prepared but also overconfident (Irvine, 2011). The call for higher education to better align curriculum with how employees need to learn in the workplace had simmered for decades but reached full boil when a widely publicized Gallup poll showed that only 14 percent of Americans – and 11 percent of business leaders – strongly agreed that graduates have the necessary skills to succeed in the workplace, while in a previous survey a full 96 percent of chief academic officers – perhaps suffering from over-confidence themselves – reported that their institutions were doing a good job preparing students for the work world (Bidwell, 2014; Grasgreen, 2014; Jaschik, 2014).

The problem of the soft skills or “career readiness” gap has become better defined in recent years. Research led by the National Association of Colleges and Employers (NACE) has distilled the loosely-defined grab bag of desirable soft skills down to seven competencies relevant across all industries (NACE, 2014, 2018). These include:

- Critical Thinking/Problem Solving
- Oral/Written Communications
- Teamwork/Collaboration
- Digital Technology
- Leadership
- Professionalism/Work Ethic
- Career Management

While these competencies are defined from the employer perspective, universities arguably serve students first. To this end, our university, The University of Texas at Austin, partnered with the Gallup “Great Jobs, Great Lives” survey (Gallup, 2016) which interviewed alumni to measure well-being. The study identified six college experiences that correlate with increased well-being and workplace engagement later in life. These experiences include:

- Having a professor who cared about them as a person
- Having a professor who made them excited about learning
- Working on a project that took a semester or more to complete
- Having a mentor who encouraged their hopes and dreams
- Having an internship
- Being involved in extracurricular activities

If the problem then is that employers want more soft skills relevant to the work environment, while the most satisfied and successful graduates report that meaningful relationships and long-term projects made significant positive impact on their careers, the solution is to create a learning environment that meets the goals of both the future employer and student.

1.1 Authentic learning – Making it real

Certainly, any experience in any classroom is real; there is real knowledge, real teaching, and real learning with real assessment. There are generally real, relevant hard skills learned as well. These hard skills, such as knowing how to operate software, write a balance sheet, design a web page, or program a robot are learned in a step-by-step process until the learner reaches a predetermined level of mastery. Hard skills are essential for any career and they are very real. However, an employee’s ability to effectively apply these skills in the workplace will depend on their ability to
collaborate with other people on projects that further the goals of their organization. Employers want to hire people ready to apply hard skills with other people, on projects, in a workplace environment, while many students only have experience applying hard skills in an academic environment.

Creating a real project context for learning as a response to an overly knowledge-based education system is an idea that threads back the 16th century philosophy of Rousseau and Descartes, and was further developed by Jean Piaget, John Dewey, and more recently Seymour Papert and Eleanor Duckworth. Recontextualizing learning from a theory-based endeavor to a real world, project-driven experience has come to be called “authentic learning” (Barab, Squire, & Dueber, 2000). The pedagogical literature that describes and documents authentic learning is both deep and variable. Barab, Squire and Dueber describe three models for authentic learning. The first is the “simulation model” where the tasks are emulated and constrained to a specific field of practice or profession and the second is the “participation model” in which a learner leaves the school environment and is immersed in real “on the job” environment such as student teaching. In a world of accelerated innovation, the students of today will be increasingly asked to play a part in creating the task or environment, not only responding to it. For this, Barab et al propose a third “co-evolutionary model” where “university students and classroom teachers reciprocally construct tasks” and where “authenticity is not found in the task or environment or even the learner but in the dynamic interactions among the various components.”

1.2 Going big

Examples of co-evolutionary authentic learning environments are neither prevalent in K-12 nor higher education but they are easy to locate due to their outsized influence on the ongoing educational reform conversation in the United States. Examples include Gever Tully’s Brightworks School in San Francisco which has put the curriculum entirely in the hands of the students in a school where teachers have been transformed into “collaborators” (Jones, 2018). At High Tech High, another entirely project-driven school, made famous by the documentary Most Likely to Succeed, the charter is based on four principles: equity, personalization, authentic work, and collaborative design (K. Schwartz, 2018). On the other side of the country, Emily Pilbton’s Studio H, transformed the community of Bertie County, the poorest in North Carolina, by designing and building a farmer’s market structure with ten high school students (A. Schwartz, 2011). Also, at The University of Virginia Melissa Goldman, Steven Warner, and Eric Schmidt created the multi-semester Stan Winston Festival of the Moving Creature that created both classes and workshops between three different departments to design and build multiple walk-around monsters for public display (Hull, 2013). In each of these authentic educational innovations their success shares three commonalities: 1) They all engage their communities, 2) They all emphasize the importance of a public exhibition, and 3) They all go big. The projects are ambitious, courageous, perhaps even fool-hardy, but they also tell a great story and attract engagement. Inspired by these examples, we considered how the project-based nature of our practice in theatrical production shops at Texas Performing Arts could also go bigger, grow beyond the more linear apprentice-influenced instruction and create a more authentic learning environment that would serve students who not only pursue careers in theatre but also film, themed attractions, entertainment, or various other forms of design.

In the fall of 2017, our department was offering a theatrical production of the play ENRON by Lucy Prebble. This production required three human-sized, glow-in-the-dark velociraptors, but at the time our production staff had no feasible method of delivering them. Instead of paying an outside company to create these velociraptors, we decided to turn our “problem” into an opportunity to teach a class on collaborative design and production. As we prepared to plan our course, we adopted a helpful organizing metaphor: the charismatic mega-project, a riff off the term “charismatic mega-fauna” used to describe large popular animals, such as elephants, tigers, and whales, that are useful in gaining public support for conservation efforts (Ducarme, Luque, & Cournchamp, 2013). Whereas the World Wildlife Fund might endeavour to highlight orangutans to drive engagement for a campaign to prevent the destruction of an entire forest ecosystem, we would use the raptors to drive student, institutional, and public engagement while building student soft skill capability with an authentic learning experiment called The Enron Raptor Class. We had a hunch that given the right resources and the right coaching, 16 university students could design and build three velociraptor suits in 14 weeks.

2. Methods – Going big and being real

The three raptors represent the debt-hiding financial instruments that ultimately led to ENRON’s calamitous downfall in 2002. The raptors proposed by graduate costume design student Caitlyn Graham aimed to be as big,
scary, and high-tech as the financial instruments they embodied. The raptors were critical to the storytelling, but at the time of their proposal the customary builders of such elements, costume and props staff, were already fully occupied by other projects. After weeks of meetings, during which the leading solutions focused on various outsourcing options, we proposed to “class-source” the raptors with a one-semester, three-hour independent study in which we would turn over the responsibility of technical design, fabrication and delivery of the suits to students. The Enron Raptor Class would engage with the real problems of real deliverables. Therefore, to be successful we understood that we had to blend strong pedagogy with excellent project management to achieve both desired learning outcomes, as well as deliver three dinosaur suits.

The complexities and scope of combining the practice of good course design, including learning objectives, outcomes, and assessment, with the discipline of managing scope, time, cost, risks, and stakeholders was truly daunting. It is difficult to discuss these interactions without one area of concern, pedagogy or project, taking over the conversation. To navigate this labyrinth, we defined four course objectives.

- Execute professional quality production elements for theater and performance
- Develop students’ capabilities for collaborative work and creative confidence
- Connect students with a diverse group of experienced professionals and career development opportunities
- Publicly demonstrate the impact and value of UT’s culture of innovation on the student experience

The first of these goals, to actually make the raptors, leads the list pro forma. All activities from onboarding to assessment served this goal. This is not to say that student learning was not considered, but for the purposes of planning and teaching a project-based course, prioritizing deliverables helps to focus decision-making. With these agreed upon waymarks, we built the course by 1) recruiting the right students 2) empowering them work to their highest potential, and 3) ensuring they had the resources they needed to succeed.

### 2.1 Recruitment – Charismatic mega-projects need charismatic people

Our intent for the Enron Raptors was to design a course for students specifically interested in the fields of film, theatre, and themed attractions. As these fields have grown to incorporate more technology, they increasingly depend on effective collaborations between very diverse disciplines (Carr, 2015). With this in mind, we developed a plan to recruit an interdisciplinary roster of students and therefore strove to eliminate as many barriers to entry as possible. Students were not required to be majors of our home department in Theatre and Dance, nor was fabrication experience required, though we did use an online survey to screen students before giving instructor consent to enroll. In our survey we offered three open-ended prompts: 1) Tell us about a collaborative project that you have worked on; please describe the challenges and successes, 2) Tell us about something that you have made that you are really proud of, and 3) Think about your existing commitments for the fall semester; do you have enough time in your schedule to invest into this project with complete dedication and focus? The answers to these questions gave us an opportunity to assess student commitment, while also initiating a relationship with each student months in advance of the first day of class. The answers also gave us an opportunity to understand why students were interested in taking our course and what they hoped to get out of it. Despite our narrow focus on career development, we learned that student interest was driven by surprisingly disparate reasons, not only for the love of Jurassic Park and the themed attraction industry, but also their enthusiasm for community organizing, their interests in management, or just for the fun of it. In an unexpected and profound reversal of the teacher/student relationship, the enthusiastic student response to our questions motivated our own efforts to design a course worthy of their dedication and trust.

### 2.2 Empowerment

True authenticity requires a level of agency and responsibility that students may be unaccustomed to in a classroom setting. Correspondingly, seasoned teachers who are unable to resist their instinct to build a course around lectures and demonstrations regardless of how relevant their expertise may be to the project, are unlikely to be successful in designing authentic learning environments. Because the established relationships between teacher and student are so strong we knew that student empowerment depended upon our efforts to undermine our own authority and abdicate our traditional roles as teachers. Only then could the traditional relationship be renegotiated and the course become truly student-centered.
Authentic projects can use the ignorance and inexperience of the instructor to its advantage; if an instructor truly has no experience with the problems presented then they do not have to pretend not to know or hold back information. If the students detect that the teacher has a solution to their problem but is merely feigning ignorance, the course can then devolve from a student-driven project back to the familiar pattern of what C. E. Nelson describes as “teacher games” where students endeavour to “get into the teacher’s head” to elicit information (1994). Furthermore, students do not always believe they have been granted full agency (Goldberg & Sommerville, 2014). This process of abdication can prove to be uncomfortable because both students and instructors will have to renegotiate their conventional relationships. This discomfort and vulnerability are unavoidable and necessary in a truly authentic learning environment. Provided that the student is offered sufficient coaching and support, what Laiken (2006) describes as “optimal anxiety” can be used as the basis for growth.

2.3 Facilities, facilitation and learning resources

Securing classroom space is a challenge in most university departments, and fabrication spaces are even more closely guarded. For the Enron Raptor Class, we retrofitted an underutilized storage space and dubbed it “The Hatchery.” Beyond moving in a second-hand white board, a flat screen television, and a few plywood topped work tables, we expended minimal effort to outfit the space, choosing instead to grow slowly into the space in response to project needs. It is worth noting that there is an assumption in education that project-based or design-centered learning must start with new facilities and new tools. Yet the history of innovation consistently shows otherwise as Bennis and Biederman describe in their book Organizing Genius. Citing the cramped, “slumlike conditions” of the Lockheed Martin Skunk Works they observe, “The tendency of great things to be accomplished in dreadful spaces should give architects and decorators pause… Perhaps the charmlessness of these places forced the people who work in them turn inward, where problem solving takes place” (1998).

We took advantage of a fortuitous opportunity for a class visit to Quantum, a professional museum display company that was coincidentally working on its own dinosaur project. This opportunity allowed our students to interface directly with their counterparts in the professional world and allowed them to gain explicit feedback on their own dinosaur fabrication dilemmas. Because of the generous candor of these artists, our students were able to learn from professional techniques but more importantly, professional mistakes. As one student wrote later, “Quantum was one of the most eye-opening guest artist spots.” Other such guest artists included Ron Pardini and Zoe Morsette, both of whom are accomplished professionals in film, television, themed attractions, and theater. We made the most of their mentorship by scheduling their visits to occur during studio work days. When one student asked about the provisional zip-tie connections they used and what the professional solution would be, Pardini, a veteran propmaker, responded, “That is the professional solution.”

3. Outcomes – Teaching, learning, or along for the ride?

The problem with teaching an experimental course is that it is very difficult if not impossible to be an impartial observer of a system while simultaneously contributing to it. Though soft skills were both a means, and an end to the Enron Raptor Class, we did not set out to design a course to study soft skill growth. Yet we knew that without such growth we would be unlikely to deliver the final products. What follows is a discussion of that process to support this assumption.

3.1 In the beginning there is onboarding

When a new employee enters an organization, the culture and norms are pre-established by the existing community, whereas in an authentic course, the teacher must consciously establish, monitor, and manage a new learning community from whole cloth. Taking our cue from business best practices, we started on-boarding at recruitment by building culture, setting expectations, and demonstrating our dedication to the student experience before the first day of class. In the summer before fall semester we emailed students suggested readings on the topics of collaboration and creativity. Before long, anticipation was so high for the course that one student asked if she could schedule a social mixer before the first day of class. With her help, we devised a get-to-know-you matching game where students endeavored to match names with projects from the “project you are proud of” question from the previously-mentioned instructor consent survey. Not only was it fun for students to learn about each other’s capabilities, but we also demonstrated that their projects were worth sharing with the group.
Within the first few moments of the first day of class, we introduced students to Paul Graham’s concept of the “trough of sorrow,” (Yarow, 2012) one of the many metaphors we stole from the world of startups and software development, which describes the experience of a seemingly promising idea that devolves into a nightmare of unforeseen complexities and challenges. We superimposed a milestone timeline over Graham’s trough of sorrow illustration to help students anticipate this inevitable downside of creative work. We wanted students to feel enthusiastic about their semester’s opportunities, while also allowing for candor about the challenges that were in front of us. Too often students are put into “sink or swim” situations without also building an emotional support network that models ways to navigate through the inevitable stress (Walker, Gleaves, & Grey, 2006). This discomfort is the first step in creating authenticity and “what makes it possible to endure or even enjoy such an experience, is that the level of support offered to each learner equals the level of challenge” (Laiken, 2006).

Another essential element of building our team was to ascertain what our students actually wanted to learn. Thoughtful design of identity-building activities cannot be over-emphasized. In a charismatic mega-project, a class must become a team. Yet simultaneously, individuals must also set personal goals aligned with the goals of the project. To begin this process, we asked each student to share three skills that they could bring to the project and three skills they hoped to learn from others. We later referred to these “have/wants” to assign project teams.

The last objective of the first day was to ensure that each student understood that their voice was important and heard. After brief presentations from all stakeholders, we designated four areas of inquiry: story, fabrication, performance, and constraints. Then we distributed sticky notes and markers and asked everyone in the room to silently write and post all that came to mind within each area of inquiry on a life-sized printout of a raptor. Maintaining silence during such exercises is essential to delineate a path to participation and reduce premature self-editing. After cycling through each of the themes in this manner, students were only then allowed to speak and organize the sticky notes into clusters of emphasis. Standing back to look at the largest clusters of sticky notes revealed a heat map of the problems. After class, photos were taken of the clusters of sticky notes and shared electronically with the class. We then assigned student pairs to use the heat map information to develop project briefs and propose an organizational chart of sub-teams. These exercises were both a shock and revelation to the students. During a later interview, one undergraduate said, “I came into the class thinking that J. E. and Karen just had these raptor schematics laying around and that we’d just follow the plan. But on the first day everyone learned we’re designing them too. We were like, ‘wait, what?’”

Figure 1: Mind map process
A week later the students presented their org charts to the class. Despite every effort to undermine our status as instructors, many students persisted in placing us at the “top” of the organization, with one org chart declaring explicitly that “the teachers have the ultimate power.” Clearly, we had work ahead of us if we wished to flatten our nascent organization. After the design briefs were presented, students began to grasp the complexity and ambitiousness of the project, and the class then blended the org charts together to create three separate departments: Artistry, Structure & Performance, and Lights & Automation. Then students selected which of the teams they most wanted to work in by placing stickies on those areas. After some haggling and minor instructor intervention the final teams were announced later that day. This clarified student responsibilities by the third week of class, while also deepening student investment in the organization. Although the first two weeks saw much bewilderment as we wrestled with these activities, many students acknowledged that the process of developing design briefs and org charts was indispensable. One student observed in a blog post, “We got where we needed to be, but it took more time than I expected… It is easy to get excited about the fun stuff, and hard to remember that before that fun stuff comes a lot of planning.”

Figure 2: Organizational chart

3.2 Rapid iteration and agile project management

With scope, objectives, and responsibilities more clearly defined, our next strategy was to unleash maximum creativity at maximum speed. We declared a rule for our course, inspired by the Palo Alto based design and consulting firm IDEO: Never show up to class without a prototype (Kelley & Kelley, 2013). This idea, that there should be a new iteration for every class meeting, was one of the few directives we gave to the students. The research of Teresa M. Amabile and Seven J. Kramer (2011) has shown that “of all the things that can boost emotions, motivation, and perceptions during a workday, the single most important is making progress in meaningful work. And the more frequently people experience that sense of progress, the more likely they are to be creatively productive in the long run.” This simple idea, that progress can maintain momentum, was essential to completing the project. After an inspiring Skype interview and demonstration with artist, educator, and masking tape virtuoso, Joe Rial, who demonstrated the value and versatility of simple materials, we asked the students to be ready to present their first prototype within a week using only the materials they could find in The Hatchery. This low fidelity (a.k.a. crappy) prototype phase of design helps students overcome their training to present highly-polished work and unleashes creativity, while also being a lot of fun.
Like “agile” software development methodology, we expected to see improvement every time we met. In addition to student research, we invited colleagues to offer lectures on various analogous areas of expertise, including basket weaving, CG animation rigging, and Chinese lion dancing to drive this improvement. Weekly, student teams presented their prototypes and described their progress, articulated goals for the following week, and described any issues that might prevent those goals from being realized. In this way, teams that would need to later collaborate at the intersection of lights, skin, and performance had prior knowledge of relevant elements. This weekly check-in kept all students engaged with the final deliverable. Within this cycle of constant improvement, we scheduled milestones for preliminary director approvals, performer fittings, final prototype, and final deliverables.

### 3.3 Live and public

In addition to design and execution responsibilities, each student was required to write two short blog posts on their process and growth and one “Raptor Report” post that described the progress of the whole project. This not only provided the motivation to document their process, it also invited each member of the class to take a step back and reflect on the chaos of the experience while framing their role within it. Delena, a first year graduate student, wrote, “The raptor lab is a mess; there are mechanical body part failures everywhere. But we have a place, a safe place to mess up. It’s ok to make something that doesn’t work. When you present a prototype each week, there are a flurry of constructive criticism and helpful suggestions. This kind of feedback is circulating constantly. I’m learning to let go of ideas I thought were really good but in practice are not. I’m learning what doesn’t work, which is a lot.”

In the final days of the class, while everything was happening at once, when knee joints were adjusted, skin was applied, and final lines of code were uploaded, our team closed ranks and stepped outside of their assigned positions to solve problems anywhere they arose. Our culture of valuing every participant’s voice, and the power of our collective thinking, led up to the “Raptor Unleashing” on the last day of class when three student performers wore the final suits on stage in front of an invited audience of a few dozen invited guests, and simultaneously helped launch the marketing campaign for the upcoming production of *ENRON*. Only the initial team-building effort was
more important to the overall success of the class than this final public event where the entire class celebrated their collective effort and was recognized for their success by the university community. Several students even invited family members to the event.

Figure 4: Unleashing talkback

4. Conclusion

Despite the risks, our bet paid off. Three raptor suits were delivered, the show went on, and our students not only survived, but also thrived throughout a unique learning experiment. They saw the value of effective communication and the results of poor communication. Whether they were an artist or engineer, they learned to speak the single language of collaboration. And when they failed they recovered quickly and applied their new knowledge to the next solution. In conclusion, we offer the following suggestions and warnings for others who may be inspired to take on their own charismatic mega-project.

4.1 Start with empathy

Commitment and high expectations spurred our team forward but empathy and trust maintained momentum. The students learned to use compassionate language to support the creative process while also candidly calling out what was not working, as guest respondent Doreen Lorenzo, former president of Frog Design reminded the group, “no one is going to care how hard you worked on this if it does not work on stage.” As individuals and as a group, they risked public failure at the time of performance, and daily failure before their peers and guest artists. They moved through this rigorous experience by committing fully to their teams. As Jacob, a fourth-year design student observed, “It’s been two months, dozens of prototypes, and so much stress. We’ve fallen into the routine of creation; that is we have figured out how both create and solve problems. It seemed like everything was coming together and everything was falling apart.”
4.2 Go public and be honest

When some of our students arrived at the 2018 United States Institute for Theatre Technology (USITT) national conference in Fort Lauderdale, Florida, the project and students were already “internet famous.” The University of Texas at Austin’s Alumni magazine, Alcalde, had sent a film crew to capture imagery of the construction process and record student stories, and a short video interview about the project was published online (Texas Exes, 2018). We also compiled and released a short video that showed the timeline and process of creating these dinosaurs over 13 weeks, and the video has reached a viewership of over a one million to date (Texas Applied Arts, 2018). This charismatic mega project worked. More importantly, our students now have a rich portfolio of content that demonstrates their collaborative capacity to show to potential employers. We believe that part of the appeal of this project is that we were unafraid to invite multiple entry points for the public to scrutinize our progress including in person, on social media, or on our blog. We knew we wanted to share this process of creation with the world, not as a prepackaged presentation, but as a messy, real-time, honest saga of striving to achieve something greater than the sum of our parts.

![Unleashing technical rehearsal](https://stars.library.ucf.edu/jteas/vol1/iss1/2)

4.3 Blur the borders

Charismatic mega-projects draw people in. There was never a class meeting that did not include at least one guest or observer in the room with us. Like a snowball rolling down a mountain, our class accumulated several honorary class members as the semester progressed. The value created by these interactions with outside students, staff, faculty and other members of the community far outweighed any distraction they might have caused. For better or worse, the raptors stalked the students beyond the borders of The Hatchery, sometimes interfering with other coursework, as one student lamented on our Slack, “I can’t concentrate in class, I want this thing to work so badly.”
4.4 Be prepared to participate

We took steps early in the course to ensure that students took on leadership roles. But as the project grew we as teachers became members of the team and took on own responsibilities. We designed solutions alongside students and were in the trenches with them, fabricating and applying final finishes. It was also a challenge to keep up with the pace of innovation and supplying materials. Rapid prototyping at this scale requires rapid purchasing to keep up with ideation and redesign.

4.5 Make “little bets”

The intent of our charismatic mega-project was to leverage existing talent and resources to make an oversized impact. Many people were depending on our students to deliver Raptors. If we had not delivered, there would have been a lot of disappointed people, but the failure would have impacted only one element of one production of one season. Large organizations tend to approach change by assembling a task force and announcing new, often expensive initiatives. As Peter Sims points out in Little Bets, such initiatives often fail because they don’t really have enough data to justify the investment (2013). The power of the charismatic mega-project is that the charisma, if made public, attracts talent and resources, thereby increasing odds of success and growing an audience. Further, our department now can point to this project as evidence of a successful, highly-marketable, collaborative and project-based learning opportunity within The University of Texas College of Fine Arts. By recombining such resources as facilities, student populations, and staff and faculty, the students who finished the class are now better prepared to enter the workforce.

Regardless of where they interview for their next job, our students will have a great story to tell, like Christina who graduated days after the Unleashing and summed up her experience this way: “Creating the desired outcome demands that you work together and communicate effectively. If you gave me five years, I could not have been able to make those suits. But all of us, bringing diverse experiences and backgrounds, made something spectacular in only a few months… I wish I could have really shown folks that the hours I spent in the theatre were just as valuable as the hours in the robotics lab and far more fun to boot. Instead of asking students to shut out the rest of the world and focus on the task at hand, creative projects ask students to bring the world in, to grab a friend, to study someone else’s technique, to learn and grow from the outside in.”

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