

Future Pathways for Design-Driven Entrepreneurship Education

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Abstract

Designing in and for transition, within contexts of constantly changing certainties and boundaries, demands new models of pedagogy; capable of building deep competencies within students beyond the studio's borders.

Academia is facing radical disruption as students demand a redefinition of education (Trautler, Coleman and Hoffman, 2014). This transformation must be applied within design education. How do we educate designers to design for present ambiguity and future uncertainties in a world with radical complexity and wicked problems?

Parsons ELab is a design-driven academic business incubator and research lab with the ambitious mission to develop a distributed academic incubation model.

Our research investigates how to transition design education and its evaluation, create models for future academic distributed incubators, and new research methodologies to incubator and accelerator research.

Conventional incubation research is focused on understanding the financial impact of incubees through their period of incubation (Messeghem et al, 2017). Parsons ELab has developed a mix of deep qualitative and quantitative research to build a broader view of impact.

Our research offers a unique perspective in evaluating educational, financial and social impact. We find a need to challenge conventional approaches to entrepreneurship research and education. Our findings develop necessary practices in the implementation of distributed academic incubator models.

ELab continues to refine its methodology as it works towards a roadmap for other institutions seeking to encourage design-driven entrepreneurship. Our work expands definitions of impact. As we identify new transitions and needs for design-driven, entrepreneurially-focused education, we look to develop new pathways for design students to develop critical competencies.

Keywords

Entrepreneurship, Education, Design, Business Design, Networks.

1. Introduction

Academia is facing a challenge as design students are seeking an education that enables them to take on the substantive problems of the 21st century. This disruption is a function of students demanding a redefinition of education to fit their emerging needs (Traitlet, Coleman and Hoffman, 2014). Instead of received information, students seek non-linear self-instruction as they develop competencies through doing (Siemens, 2012). As design's problem space continues to expand, the tools and systems it provides for students to build their own competencies needs to be able to change with it in an agile way. Students need to understand phenomena in terms of a dynamic relationship between organism and environment (Irwin, Kossoff and Tonkinwise, 2015). How do we inculcate a view of systems that views designer as both probe and prototype, product and producer?

Entrepreneurship in design education seeks to bridge the gap between current schooling and the complexity of the modern workplace (Alexander and Fry, 2017). It offers the practicum of students directly working in complex adaptive systems, wherein design must create contexts for distributed participation (Slavin, 2016). This articulates a key gap in value that many design programs need to address for their student population. As students transition to self-directed learners seeking to apply their learnings directly into practice, andragogical pedagogical models are more appropriate and successful (Knowles, 1970).

Simultaneously, there is a need to articulate more visions of entrepreneurship and changemaking. Entrepreneurship is being taken over as a concept by a "Silicon Valley" mindset of scalability and high profitability (Wachter-Boettcher, 2017). This view of entrepreneurship means that systems-level problems and deeper critical issues facing society are unaddressed because they are not seen as profitable and/or immediately scalable. This view of entrepreneurship is heavily biased: towards a technology and algorithmic set of solutions, towards value targeted at high income users, and towards a non-diverse group of makers (ibid).

As design students graduate and bring a design-driven and social impact lens to entrepreneurship, it has become clear that there is a gap between what students learn in academic contexts and what is needed in an applied practice. Moreover, after developing in a setting that supports a diverse view of value and impact, many graduates find that the problems they seek to approach are not supported by conventional incubation and acceleration programs.

Many of these challenges were observed through graduates from The New School and Parsons' programs: in transitioning a final thesis or studio project into a viable business and in attempting to approach systems-level impact but finding limited support. Students had completed design educations and developed design driven projects they wished to apply within the world around them but faced a gap in competence and a dearth of support. Post-secondary educators are seeking to transition models of learning from contractual to collaborative, wherein education is seen as a joint venture between teacher and student (Fornacieri and Lund Dean, 2014). ELab offers recent graduates this opportunity to engage in a collaborative learning experience, with the academic incubator creating the space for self-directed and student-owned learning and growth.

Identifying this gap, ELab was founded as a bootstrapped research project within Parsons School of Design within The New School by professor Rhea Alexander. Without seed funding or broad support, ELab focused on coaching, mentorship and network-building to provide value and support to fellows. ELab needed to be decentralized, distributed, sector agnostic.

Working against and within these constraints meant there was no model for ELab to follow. However, developing "skunkworks-like" hubs are a common tactic for innovation since their eponymous inception by Lockheed Martin (May, 2012). Similarly, ELab's model allows faculty, students and alumni to play and experiment with new tools and approaches outside of the confines of accredited programs. Distributed academic incubators have the potential to offer students the structure and support to investigate and develop critical supplementary competencies to instigate change at a systems-level.

Over the past four years, ELab has grown from a bootstrapped operation to a hub within a distributed network of entrepreneurship within its academic and entrepreneurial community. We have supported 56 entrepreneur-alumni, with almost 50% of the enterprises supported by ELab still in operation today. From its initial founding as a research operation, ELab now employs multiple students in venture associate, research, design and development roles, offering a second layer of immersive educational and professional experience opportunities for students at Parsons and The New School. As we have evolved, we believe the path forged is one that many art and design schools and institutions can look to for insight and pathways.

2. Research Approach

Business incubator research is still a nascent field with much research still needed, especially work focused on incubees and their innovations (Hackett and David, 2004). Another identified area is in understanding the relationships between entrepreneurs and their networks, as well as how those networks themselves develop and impact communities (Charry et al, 2014). University business incubation research is that much further underdeveloped with organizations still trying to understand how to even approach and articulate questions of services, outcomes, and impact (Subeika et al, 2015). Business incubators and arts incubators in multiple contexts struggle to understand process and approach, tending to only look retrospectively at ends without understanding the means (Essig, 2015). Moreover, conventional incubation research is often limited in scope, focusing on understanding the financial impact of incubees to the exclusion of other areas of inquiry (Messeghem et al, 2017)

ELab has sought to develop research methods and practices to help understand how it can help its Fellows, grow and evolve as an incubator, contribute to a broader understanding of the incubation process within an academic setting, and provide a model for distributed incubation for other design-driven educators and institutions as well as for the broader startup community.

Our research includes both qualitative and quantitative methods. In-depth qualitative interviews are done with Fellows, ELab mentors as well as ELab staff at multiple times during a fellowship as well as after. Quantitative assessments are done at two to three intervals of a fellowship. Fellows have public facing presentations at three events: Pitch Night, Midway, and Demo Day. At these events, general audience members as well as a selected panel of judges comprised of industry experts, mentors, and entrepreneurs, evaluate the fellows on a rubric assessing their general progress across various indices including team development, product development and presented capacities and competencies.

ELab itself has developed and evolved through a design-driven practice of experimentation, reflection and iteration. With each successive year of the program, ELab has changed its approach and offering to better meet the needs of its Fellows and the Parsons and New School community.

Collected are the summaries of our findings, organized around key themes and areas that any design institution, seeking to support an inclusive and socially impactful community of entrepreneurship and engagement, will have to address in its own programming. We explain our current model in terms of those findings and offer a series of conclusions and questions for our community to investigate and address in the development of a design pedagogy that transcend studio spaces and extend to shared futures.

3. Findings

3.1. Fellow Selection

As an academic incubator in a diverse school, city and country, ELab has made a conscious decision over its years to support entrepreneurs and build an accessible avenue for students and alumni to develop their entrepreneurial acumen and their business ventures. ELab views itself as an extension and continuation of design education, providing the space and support for explorations of design-driven ventures and practice within local and larger communities. However, we have had to face some realities that are important considerations when balancing access against potential success.

- (1) Their financial need and capacity to contribute effort to their project success. Students encumbered by significant financial debt and constraints and the jobs needed to support them through their studies.
- (2) Supporting diversity and confronting its institutional barriers. International students often are hard-pressed into different jobs due to visa insecurity. Similarly, financial needs and capacities are not evenly distributed amongst the student population.
- (3) The potential for positive social, cultural and environmental impact the business is projected to have and the systemic challenges they may face to bring about the change they seek.
- (4) Being sector agnostic can compromise competencies and abilities to support some of the models and sectors fellows seek to enter.

Institutions seeking to build entrepreneurship programs face a series of choices when it comes to the priority of access and diversity and the probability of Fellow success; especially within the constraints of a minimally funded initiative. The paired constraints of limited funding and institutional support are all too common for smaller liberal arts schools and limit the kinds of students it can support. Moreover, a lack of support can mean a bias for programs to not support ventures that pose too high a risk of failure.

By being open to failure and iteration, and due to its origins as a wholly bootstrapped support system, ELab has been able to support a diversity of Fellows and ventures. However, through the research they have found how they best add value and are seeking to focus more on their ability to create the most about of impact in the 12 month incubation time.

For educators interested in developing academic incubators, it is important to understand the context of your institutions' students and develop criteria to ensure a fit between the means available to you and the needs of students, alumni and startups. Especially when funding is limited, selection criteria need to ensure an appropriate value exchange for both parties, for students to succeed and for the incubator to grow and succeed as well.

3.2. Fellow Selection: Transitioning Forward

One question that ELab is currently facing is an understanding of the progress needed to have already been achieved, prior to application, for a successful ELab fellowship. This involves determining the right stage of development for the specific business sector as well as size of the challenge and even what success means in a particular sector. ELab is working to develop stronger criteria for Fellow selection, and also an evaluation of the ELab itself and its competencies to help further Fellows along. To date, ELab has found that Fellows who have identified a core business model, reached an MVP (minimum viable product stage), or who are in the process of approaching challenges of scale and structure tend to thrive in the ELab incubation model. Fellows in the very early stages of development, meaning they are still looking to identify a product or still in preliminary research stages, are often frustrated at their own rate of progress versus other fellows and also find that they are unable to fully avail themselves of ELab resources.

Because the ELab is not driven by financial gain, we believe in taking risks by exploring how to support different and novel business models. For the 2019 cohort, ELab is explicitly encouraging business models that aren't often supported in conventional business incubators, including non-profit and agency models. Moreover, ELab is looking to help support emerging business models, for example encouraging fellows to explore the possibilities in new systems including platform cooperativism as outlined by the Platform Cooperativism Consortium (<https://platform.coop/about>). By supporting this kind of experimentation, ELab helps design students develop meaningful skills and competencies only available through an active view of the Fellow as both probe and prototype.

3.3. Providing Non-Financial Value

ELab is a non-financialized incubator, taking no equity stake in the ventures. This has meant that aside from a year-long incubation model, value has to be developed through networks, communities and mentorship. This is all the more critical given the importance of building thriving ecosystems in supporting early stage ventures; a key value, for example, of the International Business Innovation Association (InBIA: A Global Network, n.d.). To that end, ELab gives Fellows membership to sector specific partner co-working spaces for a year.

When measuring quality of service delivery within business incubators, academic incubators are considered the least successful at providing financial services (Kilcrease, 2011). This is unsurprising given the large investment power of for-profit seed capital incubators (ibid). Therefore, academic incubators need to reframe their proposition to provide impact and value to young entrepreneurs. One advantage we have found in being a non-vested incubator is that we are non-exclusive. ELab Fellows who, during their fellowship, build upon their success and are often invited into other accelerators that do offer funding at the cost of exclusivity and equity. In this way, non-financial support means greater flexibility for Fellows as they build and grow their business.

Value at the ELab comes through program customization and personalized support based on the needs of each Fellow as they progress throughout the year. We attempt to find the correct networks, the mentors and coworking spaces, connections and resources to help address the immediate and short-term challenges facing our fellows' work. This entails familiarity with the underlying business and personal situation of each Fellow. Coupled with the distributed model of our incubator and the tailored curriculum, ELab offers Fellows the opportunity to practice in contexts for distributed participation and non-linear learning. This model of pedagogy demands a more dynamic relationship between institution and student with value becoming more contextualized to the student's practice.

Value is also generated for the academic and design community and the alumni network as a meaningful way of giving back and connecting through impact. The level of technological change and acceleration in today's economy, coupled with the growth in hybridized careers has made it a necessity to be a lifelong learner ("Lifelong learning", 2017). For recently minted alumni, ELab allows them to stay connected and benefit long term from the academic network. These forms of added value reflect well on institutions and their offerings, even impacting where prospective students choose to study.

3.4. Providing Non-Financial Value: Transitioning Forward

As Fellows come through ELab and we develop greater clarity on the kinds of initiatives and Fellows to support, the challenge is developing a curriculum with enough flexibility to meet the distinct and differentiated needs, but enough structure to ensure community, continuity, benchmarks, and progress. Psychological and emotional support are both critically important and often unaddressed for entrepreneurs (Hoang and Antonic, 2003). We are finding that the community of ELab itself is a value to many Fellows; ELab helps address some of the isolation experienced by young founders.

The ELab community also provides momentum, positivity, emotional support, community, cheerleaders, and shared emotional investment. These are consistently found to be amongst the most powerful sources of value for our Fellows. Quarterly community meetups, workshops, one on one coaching, public and semi-public assessments, all offer opportunities to cultivate emotional resilience in Fellows as they are faced daily with the daunting task of their ambitious new ventures.

3.5. Community and Ecosystem

As ELab has continued to promote and develop support for design-driven entrepreneurship, it has built connections and helped forge partnerships and new initiatives at a micro level, within its local community at a meso level, and also has began the work of looking at broader contexts at a macro level. We holistically mapped our ecosystem and set out to create synergies and partnerships to support our fellows, build their networks and their businesses. We have broken up the micro, meso and macro levels into 4 segments: mentorship, fellowship, partnerships, and communities.

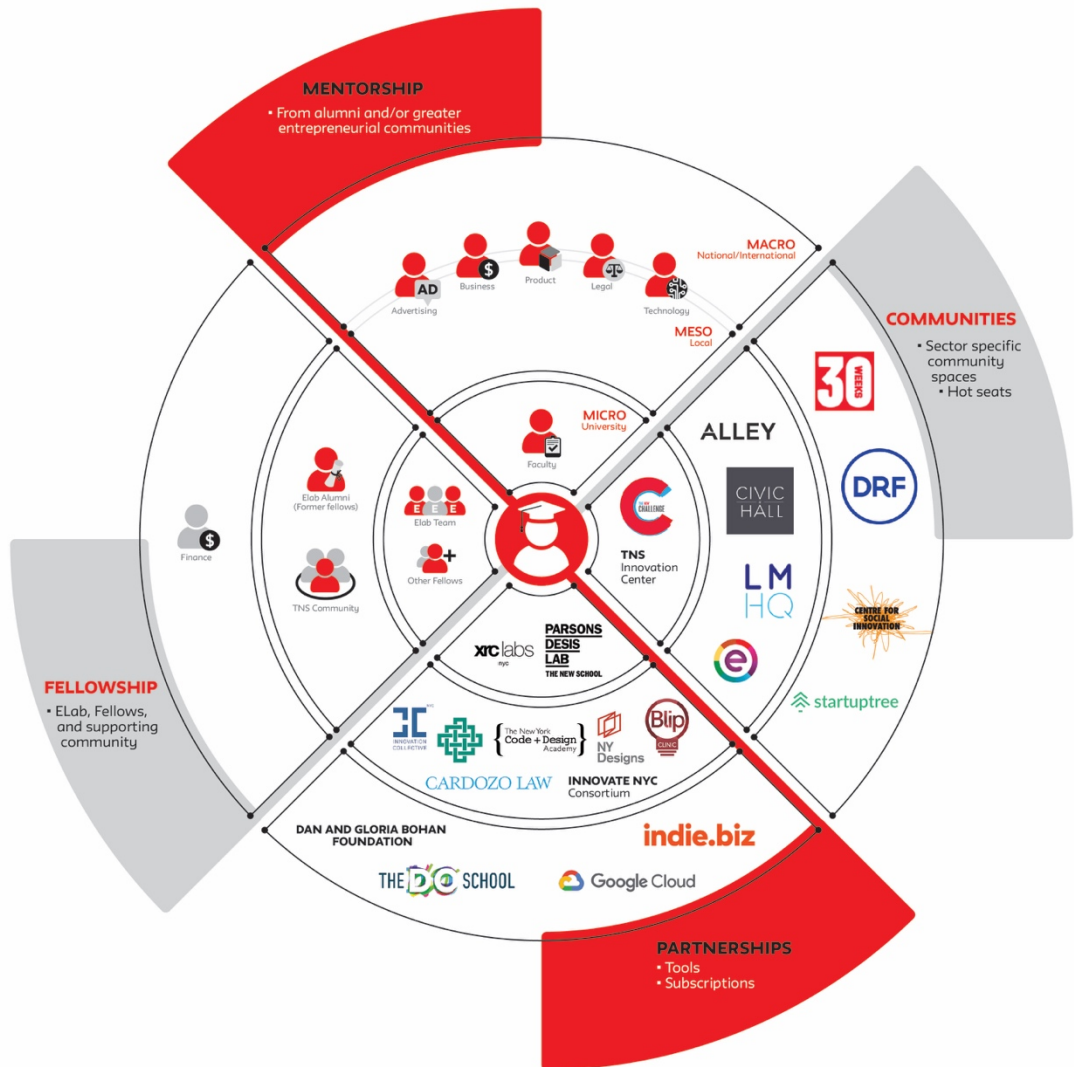


Figure. 1. Parsons ELab Ecosystem Map

3.6. Community and Ecosystem: Transitioning Forward

ELab was at the forefront of a growing movement to heed the call from students and alumni for more Entrepreneurial support from the academy. To respond, The New School is establishing an entrepreneurial graduate minor in 2019 and, through a Kauffman grant received in 2018, created a fellowship program for high-potential leaders from diverse backgrounds committed to social impact (<https://www.newschool.edu/impact-entrepreneurship/>).

ELab now finds itself in a fulcrum position within a growing community of practice. At the micro level, there is growing support for programming looking to support design-driven entrepreneurship. This includes academic programming through Parsons' Masters of Strategic Design and Management program, the development of the Impact Entrepreneurship Initiative and other student-driven initiatives. These stakeholders mean that ELab may need to adjust its offered value. Maintaining a nimble, iterative approach to its own structure is critical for ELab to function as both instigator and catalyst within its micro-community.

At the meso-level, ELab is continuing to find and connect partners and identify opportunities that could be of potential value to its Fellows. Given the diversity of each cohort, ELab is pursuing models that include mentors and Timebanks, and partnerships on offer conditional on the needs of Fellows. By building a more diverse and flexible network, ELab is expanding the range of Fellows it can successfully support and also the various connection points of entrepreneurship within its meso-community.

Finally, at the macro-level, ELab is using its evolving approach, its longitudinal research, and its growing understanding to support and instigate broader work into distributed, academic and design-driven incubation models. Recent scholarship by ELab has focused on sharing its own journey and findings to provide examples and pathways for other institutions seeking to transition their design offerings to meet the needs of new students facing novel and complex problem-spaces (Alexander and Fry, 2016). ELab is also a member of the NYCIC (New York City Innovation Coalition), a newly formed non-profit organization bringing the incubation, acceleration, and startup community of greater New York together for shared learnings, support and development of best practices.

3.7. Program Structure

As ELab has evolved, so has its program structure. We have found that the specific curricular structure of an ELab cohort's is conditional on a fit between the resources at hand and the needs of the particular fellows. As educators take up the challenge of developing their own programs, they should expect and aim to change constantly each year. Between changing resources, communities and student needs, programmers need to ensure that they can offer the value needed for their incubees to succeed.

Below is a timeline of ELab, as a demonstration of our own evolution, revealing the learning and iteration that has taken place since ELab's inception.

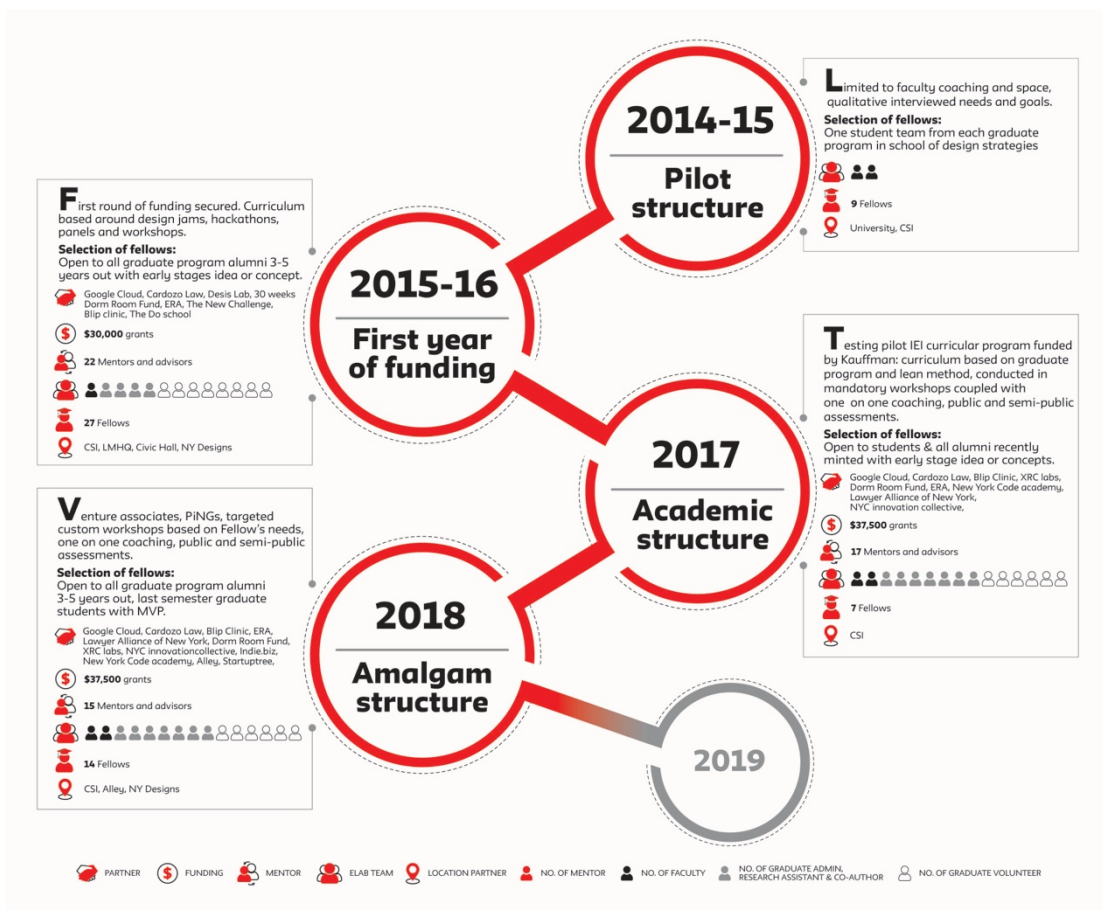


Figure. 2. Parsons ELab Timeline

2014-15 was a pilot partnership with CSI that enabled founding faculty the ability to research the needs and methods of support for design-student fellows.

In 2015 ELab secured its first round of funding from the Dan and Gloria Bohan Foundation and the School of Design Strategies within Parsons which enabled the first blueprint to be developed to test with 2016 cohort where ELab accepted a record 11 startups, managing a significant portfolio of new ventures across diverse sectors and business models. The curriculum was based on traditional Silicon Valley programming including design jams/hackathons, panels and workshops. While this included a number of successful business ventures, many did not. ELab learned that the level of contact needed to support Fellows meant that ELab needed to scale back overall cohort size and focus more on each Fellow's specific needs.

ELab's curricular offering has constantly evolved, learning from each of its yearly cohorts and found the need for more structure. Testing and developing a Lean-inspired academic curricular structure in 2017, ELab prototyped an IEI curriculum, that later would be funded by an inclusion grant from the Kauffman Foundation, that is now used in the Impact Entrepreneurial Initiative.

3.8. Program Structure: Transitioning Forward

ELab's approach to programming has been iterative and holistic. It has gone through multiple evolutions of its structure, its offered services, capacities and funding, looking to address the physical, emotional and psychological needs of the Fellow throughout their yearlong growth. As ELab has grown it has helped instigate and develop an academic eco-system for student entrepreneurs and changemakers. This also means that the role of ELab needs to adjust and change to continue to provide meaningful value to its Fellows, mentors and community at large.

Currently, graduate students with business and design backgrounds act as Venture Associates and help manage Fellows on a week-by-week basis, design teams help Fellows develop high quality supporting materials, leadership provides mentorship and constant contact with Fellows, and social media is leveraged to help Fellows generate publicity and market recognition. Alumni mentors are in a time bank offering office hours to Fellows on an as-needed basis to support a self-directed development. Added to this is the technical support, legal support, as well as membership at sector-specific coworking spaces (depending on the Fellow). We provide structured programming through our fireside chats with various stakeholders within the ecosystem.

Our aim is to marry the best of both our venture-associate structure, with its highly customized and focused support for each independent fellow with the the immersive peer to peer learning gained from their community and shared learning benefits of a more academic structure.

One perceived challenge in supporting Fellows is a lack of physical space. However, working in a distributed fashion affords exposure and immersion of its Fellows while significantly lowering operating costs. As a research lab, we have a very small annual budget, under five thousand dollars from the academy, and just shy of thirty thousand from foundations and sponsors. Although this is an area for potential growth, limited funding has not limited ELab's ambitions nor ability to provide high quality programming to its Fellows. As other institutions and educators seek to apply similar models, the success of a distributed academic incubator in spite of limited funds is an important and valuable lesson.

3.9. Impact

A significant point of differentiation between Parsons ELab and other conventional academic incubators is its view of impact. Typical views of entrepreneurship focus on venture-backed companies skew impact to be evaluated in terms of scalability, revenue and job creation (Rubens et al, 2011). However, is this the appropriate lens for evaluating impact in an academic setting, in a design setting, and in a context of extreme social and environmental distress?

Academic incubators typically represent an arrangement whereby institutions gain valuable intellectual property (through licensing agreements) by empowering students, faculty researchers and alumni to develop startup businesses around key research innovations (Fry, Alexander and Ladhib, 2017). Classically, business incubators are viewed as a catalyst tool for either regional or national economic development (InBIA, 2017). In contrast ELab seeks to address large scale systemic social problems (Fry, Alexander and Ladhib, 2017). We wish to explore a broader assessment that includes cultural, environmental and social impact as part of that assessment. In a venture environment focused on big technology and pharmaceutical innovation, it appears vital that academic incubators help support enterprises that seek innovation in social, civic, cultural and environmental spheres.

As ELab has proactively selected Fellows with ambitions for impact beyond finance, we have found that many of the traditional structures of startup incubation are not well suited to these enterprises. Approaching 'Wicked Problems', as defined by Horst Rittel, involves moving from a mindset of "the right answer" to building shared understandings of pathways forward (Christensen and Conklin, 2013). Many ELab Fellows approach and confront Wicked Problems from managing industrial waste, career trajectories to navigating healthcare systems and higher education debt. Many of these kinds of ventures struggle to initially gain support and funding. ELab, in this way, allows us to help students pursue ventures that, while in line with their academic background at Parsons and The New School, are not immediately seen as attractive and viable to external accelerators, incubators and investors.

ELab Impact Snapshot: So far, the lab has supported 56 fledgling entrepreneurs from across the graduate space 21 startups with 9 successful businesses formed to date spanning sectors and business models these include: Designing the We (class 2015), Designity (Class 2016), Dartboard (Class 2016), Senses & Co. (Class of 2016), Matter Mind (2016), In-Site (2016) Unfold (Class of 2018), Setle (Class of 2018), PMD Alliance(Class of 2018), are all operating and showing steady if not exponential growth.

We have had 44 mentors; 14 partners; 3 published research papers; 3 conference presentations; 15 workshop and fireside chats delivered in the curriculum; 16 public events hosted with audiences of over 100 attendees at each and 2 annual reports; 18 student admin/research assistants with many landing well-paying jobs in part because of the experience at an incubator; and 3 cohorts graduated as well as 9 New School students from across the university out of the Innovate NYC fellowship and 15 rounds of funding. We assisted one of our 2016 fellows to receive the first In2NYC startup visa through International Innovators Initiative (IN2NYC) for foreign-born entrepreneurs who wish to startup in NY State by helping them become eligible for uncapped H-1B visas.

3.10. Impact: Transitioning Forward

ELab is now developing an Entrepreneurial Genome Project for the 100th anniversary of The New School University which houses Parsons School of Design to contextualize the endeavors of the Elab and its fellows. The Entrepreneurial Genome Project (TEGP) attempts to map the collective innovation and total impact of The New School's alumni beyond economic growth and job creation, to include socially in their communities, and creatively within the development of culture and intellectual property (<https://www.tnsgenomeproject.org/>). ELab hopes to use progress from TEGP to help articulate to its stakeholders and communities the various kinds of impact generated by ELab Fellows.

3.11. Measurement

Parsons Elab's mandate, as a distributed and academic incubator, with its focus on community, ecosystem building and broader definitions of impact, makes measurement a unique challenge. Moreover, measurement in the ELab is not limited to Fellows themselves; measurement internally helps guide the iterative development of ELab itself. As discussed, business incubation is often looked at from the angle of job creation, and models to understand business incubation success rely primarily on metrics surrounding both job creation and economic development objectives (Rubens et al, 2011).

For Fellows, we recognize the value of quantitative metrics, but also understand their limitations. Our public facing events and judge and audience evaluations are useful for Fellows to see their own progress, however this approach has its challenges in consistency of responses for inter-event comparison. We have found the need to continue to adjust rubrics and evaluations to allow for better tracking over the year, and year over year.

More substantive work is done qualitatively through quarterly PiNGs (Progress, Needs, Goals), multiple in-depth interviews, and ongoing assessments by ELab team members and Venture Associates.

Much of this data helps ELab understand its own value to its Fellows. We have found that Fellows highly value the community-building and network elements of the ELab fellowship. Moreover, our own constant observations have found that there are critical inflection points in these early-stage businesses, which inform our programming, milestones and curriculum.

For example, ELab has found that many fellows struggle with the legal formation and structuring of their businesses; a critical business skill that many design students lack. In response, ELab has built network partners in Cardozo Law Clinic, The Legal Alliance and Brooklyn Law's BLIP Clinic to give Fellows resource access, and also a deadline by which Fellows must come to a legal structure and formal business registration. This highlights the unique ways in which a teaching-focused academic incubator can generate meaningful value for its participants through network building and curricular support.

3.12. Measurement: Transitioning Forward

There is a meaningful tradeoff in staying nimble and constantly iterating and adjusting our approach in the incommensurability of results over the past five years. Adjustments in metrics, in quantitative scoring, in event structures, and in the kinds of Fellows admitted has meant that many conventional longitudinal markers are inappropriate. ELab's work-to-date now includes a meta-analysis of its own findings, to understand the best longitudinal markers to track and chart progress against.

Another challenge with measurement is the adjusting of benchmarks and internal metrics for the kinds of business models supported by ELab. Each model has different needs and milestones, and there is a tension between the highly customized and personalized focus of the ELab's Fellowship and measurement beyond the merely immediately diagnostic.

As institutions and educators look to build measurement models for their work, ELab's experience shows there are multiple levels of measurement needed: for the incubator itself to grow and change, for the incubees as they work through their fellowship, for stakeholders and partners to see and understand progress, and for external bodies seeking to implement similar systems based on our findings.

4. Conclusions and Further Questions

As design educators continue to help students push the boundaries of design and applying its methodologies in novel and diverse systems, students need educational spaces that can support deep learning. This necessitates new pathways for students to develop an expanding set of critical competencies; even while educators face constraints in their practice and limits to institutional support. ELab's distributed academic incubator models investigate and demonstrate possibilities within these contexts, and the potential to instigate systems-change at the academic level.

Through experimentation and iteration, ELab is developing new content and curricula to be adapted and applied in a design-driven, entrepreneurially-focused education. In ELab's experience, academic incubators have the potential to be catalysts in their communities. Such ecosystem development necessitates a constant re-evaluation of how value is being generated in a dynamic context.

ELab is currently working on tools to help other design educators and institutions work through the process of developing their own design-driven entrepreneurship systems. This needs other institutions to also begin making sense of their own students' needs. We need to understand the ways by which incubation efforts are already underway in various arts and design institutions and how a model of design-driven entrepreneurship can help transform communities of practice. As we share in this learning, there is a need to understand what is needed by fellow practitioners: tools to help work through incubation selection criteria, audits of available forms of value, best practices in iteration and approaches to measurement.

Collective action in this fields could help answer questions of a higher order revolving around the impact on design education itself and how the incubator model fits within an inclusive view of design, designers and the systems we are enmeshed within.

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