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Developing practice fields for interdisciplinary design and entrepreneurship exposure

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My research involves studying and developing informal learning environments that exposes business, engineering, art, technology, and science students to interdisciplinary collaboration, challenge-based learning, entrepreneurship, and design thinking.

Developing practice fields for interdisciplinary entrepreneurship

Introduction

Engineering graduates join professionals from fields such as science, technology, business, education, medicine and art to form the creative class. This group of innovators, which comprises of nearly one-third of the workforce in the United States, is responsible for creating innovations to address society's problems (Florida, 2012). Employers expect students to master their disciplinary crafts while engaging in innovation and entrepreneurship. Due to the rapid growth of technology, many technical skills students learn in college become irrelevant during their time in the workforce. However, the ability to lead interdisciplinary teams, engage communities in need, discover problems and solutions, and envision new products and services, will always be important. An online survey found that ninety-five percent of the 318 employers surveyed prefer to hire college graduates who can utilize innovative thinking (Hart Research Associates, 2013). The employers also believe that obtaining these skills are more important than acquiring a depth of skills in college.

Graduates entering creative class professionals will work on many interdisciplinary teams varying in duration with changing participants and goals to creative new products and systems. Many companies have begun utilizing rapid design activity to discover new marketable ideas. Within these rapid environments, participants cohabitate for immersive collaboration, and innovation building. Technology companies including Facebook, Google, and Microsoft use a rapid design event called a hack-a-thon to develop new products (Bishop, 2014; Zax, 2014). Hack-a-thons' event structure includes creating a purpose or challenge, pre-event preparations, a project pitch phase, mixing and recruiting phase, project development phase, project

presentations, judging, and closing statements (Duhring, 2014). Hack-a-thons are conducted on evenings or weekends, outside of typical working hours and can range from one day to three days. Famous design firm, IDEO, designed a version of the hack-a-thon, called a make-a-thon, which is more design-driven and centered on collaboration across silos (Zhang, 2012). New ventures and early-stage startups also use a process called teaming, which involves creating temporary groups to solve problems that are complex and rapidly changing (Edmondson, 2011).

Developing an entrepreneurial mindset prepares students for the 21st century workplace. Entrepreneurship is defined as "the desire to achieve, the passion to create, the yearning for freedom, the drive for independence, and the embodiment of entrepreneurial visions and dreams through tireless hard work, calculated risk-taking, continuous innovation, and undying perseverance" (Ma & Tan, 2006, p. 704). Students engaging in entrepreneurship learn opportunity recognition, strategic decision-making, validated learning, and problem solving skills such as generating, evaluating, and selecting alternatives to a problem situation. Exposure to entrepreneurship can lead to persistence in college and higher GPAs (Ohland, Frillman, Zhang, Brawner, & Miller, 2004). Advocates stress that undertaking venture opportunity goes past a project being good enough to publish a paper or get a good grade. As Dr. Babs Carryer (n.d.), an adjunct professor of entrepreneurship at Carnegie Mellon University, states "most ideas never make it past the class deadline. Prototypes, solutions, disruptions sit on the shelf because they were designed for an engineering class not as a potential business venture" (para. 1). Even if ventures fail, students learn from the experience and improve their odds of success in the next endeavor (Minniti & Bygrave, 2001). Students can learn many useful skills by participating in entrepreneurial activities even if they don't become an entrepreneur after graduating. Students

gain the ability to generate ideas, create prototypes, and market and sell solutions, skills that are beneficial in any setting.

Student exposure to repeated entrepreneurship practice involving real world situations is important (Marshall, 2009; Zoltowski, Oakes, & Cardella, 2012). Despite the benefits of entrepreneurship exposure, many barriers remain for implementing interdisciplinary classes, including low enrollment, lack of administrative support, and inadequate curriculum (Goodman & Huckfeldt, 2013). To better prepare students to tackle society's complex problems and be efficient members of today's workforce, it is necessary for universities to overcome these barriers and develop opportunities for students to engage in interdisciplinary entrepreneurship activities. Informal learning environments are impervious to many barriers encountered by traditional classrooms, making them a viable option for engaging students in design thinking. Participation in activities beyond the classroom can be beneficial to students. Learning in many contexts help students create a more flexible understanding of abstract concepts, increasing ease of use in new contexts (Gick & Holyoak, 1983). Extra- and co-curricular activities such as co-ops, internships, clubs, and events help students connect classroom learning to a real world context and break down silos between departments and organizations (Kuh, 1994).

Problem statement

This paper reports on a research study that investigates how the development of an informal rapid entrepreneurship learning environment can prepare students entering fields involved with entrepreneurship and innovation for the type of context they will encounter in the workplace. This study uncovers students' experiences in a practice field and learning outcomes and gains. The research question guiding this study are: *1) What attributes of an entrepreneurship practice field do students find engaging (especially students that aren't*

pursuing entrepreneurship)?, and *2) How can an entrepreneurship practice field support the continuation of projects beyond the event?*.

Discovering the attributes that make practice fields successful in engaging students in entrepreneurship can assist in its implementation in diverse contexts. Insights into the features, functions, and interactions will act as and guidelines for practitioners to develop their own environments. Fostering continuation of projects beyond the event is important to prevent the same obstacles found when students engage in entrepreneurship in a formal classroom environment. Participation in the practice field should increase interest in entrepreneurship and seek out opportunities for repeated practice.

Entrepreneurship in higher education

As the importance of exposing students to entrepreneurship and innovation becomes more evident, many universities have been integrating entrepreneurial activities in curriculum. Engineering colleges have added entrepreneurship lessons into technical courses while fostering risk taking environments (Hickey & Salas, 2013; Jablonski, 2014). Schar, Sheppard, Brunhaver, Cuson, and Grau (2013), discovered that integrating entrepreneurship case studies in a mechanical engineering class would increase entrepreneurial self-efficacy and not diminish engineering skills, but does not necessary increase interest in pursing entrepreneurship as a career. Other universities have expanded entrepreneurial activity to included students from diverse disciplines (Boni, Weingart, & Evenson, 2009; Cobb, Agogino, Beckman, & Speer, 2008). Virginia Tech uses the spiral curriculum, the process of offering a series of authentic activities in increasing complexity (Takaya, 2008), to provide an immersive entrepreneurship experience featuring courses, and a summer program to students (Hixson, Paretti, Lesko, & Mcnair, 2013).

Situated practice fields

Students need access to learning environments that foster repeated authentic activity. Practice fields are useful for building learning organizations due to their ability to provide authentic contexts to learners (Barab & Duffy, 2012; Senge, 1990). Learners imitate real professionals without contributing to their field allowing them to increase disciplinary skills and engagement (Cheville & Bunting, 2011).

A conceptual framework for developing informal rapid design and entrepreneurship practice fields was first introduced in Wilson (2014). As shown in Figure 1, these practice fields should contain three elements, people (who should be in the environment), place (where should the environment be located), and program (what should happen in the environment). Entrepreneurship practice fields should contain students from various disciplines. Teams with diversity have more innovative ideas, although they also have a high level of conflict (De Dreu & West, 2001; Jehn, Chadwick, & Thatcher, 1997). Entrepreneurship practice fields constructed as informal learning environments foster problem solving in ill-defined real-world situations where there can be more than one clear solution (Kotze & Purgathofer, 2009). Use of a flexible informal environment can foster a third space experience for students. A third space is separate from work and home, and the potential for immersive collaboration and transformative learning increases through conversation (Santasiero, 2002). Design and entrepreneurship practice fields use a form of problem-based learning called challenge-based learning. Challenge-based learning starts with a big idea, which allows students to find essential questions to solve (Johnson, Smith, Smythe, & Varon, 2009). When these elements of people, place, and program are merged, a community of innovation is developed. A community of innovation (COI) is one in which the desire to innovate forms and binds the community (West, Young, & Hannafin, 2011). Other

attributes of COIs include idea prototyping, learning through critiquing, and development of group flow (West et al., 2011). Unlike traditional practice fields, those based on developing a community of innovation allows for learners to contribute to their field.

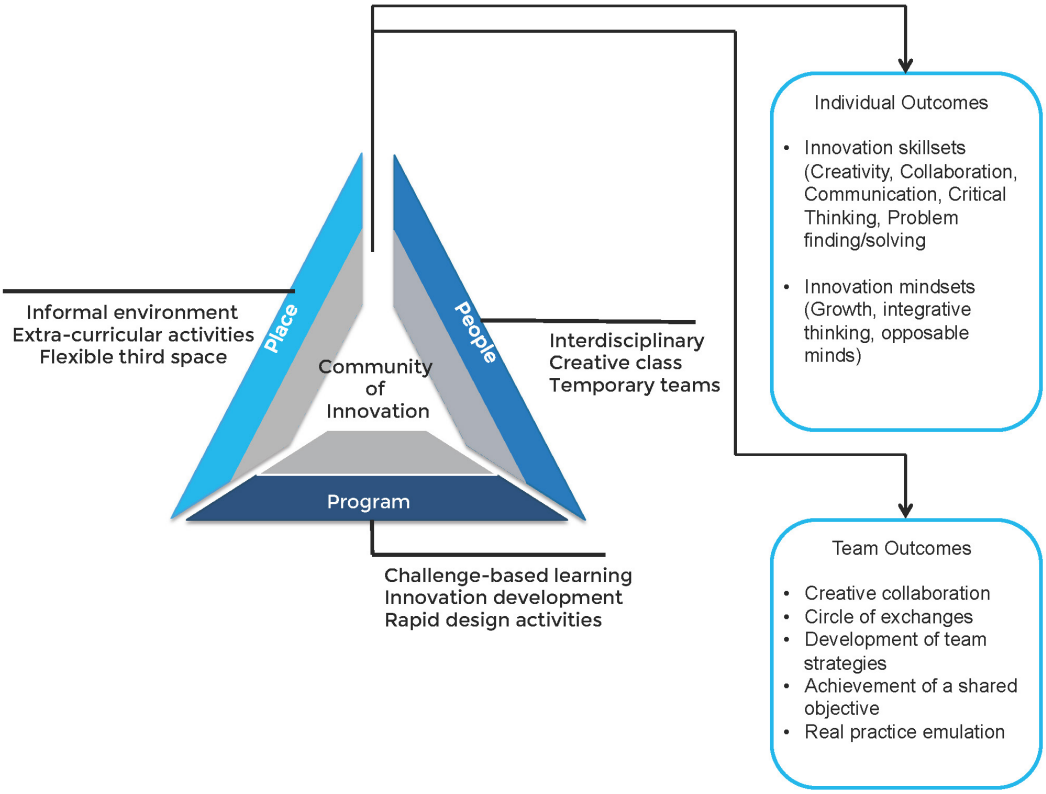


Figure 1: A conceptual framework (from Wilson (2014) for developing design and entrepreneurship practice fields.

Development of an informal interdisciplinary entrepreneurship practice field

The community of innovation framework informed the creation of a community of innovation through the development of a rapid design and entrepreneurship event. The event was

called “thinc-a-thon” in order to align with the *Thinc at UGA* initiative which seeks to promote entrepreneurship and innovation on campus (“Thinc. | The Spirit of Entrepreneurship at UGA,” n.d.). The next sections will detail how the context connects with the framework.

People. The thinc-a-thon event was open to students from all disciplines and levels, but specifically promoted to students in fields that represent the creative class. This event was designed to attract students interested in starting a business now or after graduation, but they are also meant to attract a mix of what Graham (2014) describes as “career focused students” and “subject focused students”. Career-focused students are only likely to engage in an activity if they see how it can improve their employability, while subject-focused students have deep disciplinary knowledge. Thirty-eight students from engineering, science, art, design, and business registered and attended the event. Five students would drop out before the end of the event due to various reasons. Although students could request team members, teams were randomly constructed before the event to encourage interdisciplinary collaboration. Each team contained 1-2 technical students, 1 design or art student, and 1 business or non-technical student. The distinction between technical (and design) participants and non-technical participants are common among professional entrepreneurship events (for an example, see: http://www.eventbrite.com/e/columbia-sc-startup-weekend-112014-tickets-12404491167?aff=UP+Community+Sites). I set the maximum number of students on each team to four, since larger teams can lead to communication and coordination issues and lack of cohesion (Blau, 1970; Shaw, 1976). Due to no-shows and dropouts, some teams only had two or three members.

Place. Thinc-a-thon is not connected with any class or curriculum, thus students did not receive credit for participation. The event took place in a flexible study space in the campus library. Figure 2 shows the portion of the library space used for the event. The walls of the space were covered with whiteboard paint, allowing for drawing and writing, and the tables and chairs can be easily be moved around within the space. The space provides a structure for students to work together in teams, and also foster the ability to leave and re-enter the space as necessary. This space was consistent with the co-working and creative spaces that professionals use for rapid design activity.

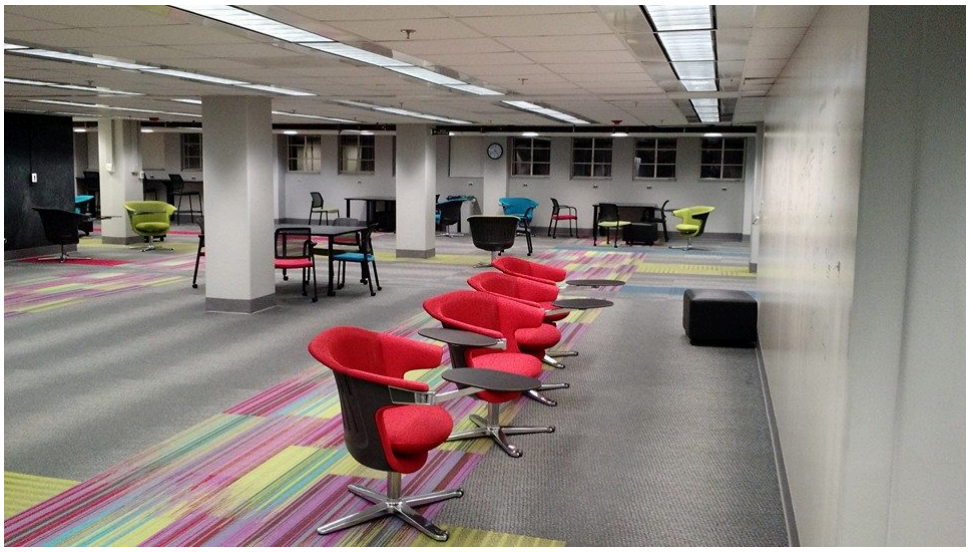


Figure 2. Flexible creative space in the library used for the event

Program. The event took place over one and a half days. The first day was three hours and consisted of explaining logistics and forming teams. The second day took place over nine hours and contained the bulk of the event. The event integrated challenge-based learning as each event focuses on a challenge of analyzing and improving various life experiences. The design challenge was called "redesigning the student experience." Projects could involve any ideas related to improving student life on campus including food, transportation, housing, and recreation.

In place of leading the students through the design or entrepreneurship processes with traditional lectures, the following just-in-time learning tools were used:

- To foster team cohesion and a community of innovation, I used a T-shaped cloud activity created by u.lab, a innovation lab (Jakovich & Schweitzer, 2012). In this activity, students gather into their teams, interview their teammates about their disciplinary skills, wider skills, and passions, and write their responses on Post-it

notes. Each team then places their notes on a large poster board to create a large "T". Post-it notes related to skills made up the trunk of the T, while passions made up the branch of the T. This activity helps participants learn about teammates' and the community capabilities. It also fosters empathy and openness among teams (Jakovich & Schweitzer, 2012).

- Throughout the day, I offered short 45 minutes – 1-hour pop-up classes, quick, just-in-time learning classes, based on mindfulness, business pitching, and prototyping. Not every member from each team was expected to attend every class (except for the mindful class that took place at the beginning of the day). Participants went to classes that they were personally interesting so that their team could continue to make progress on their project throughout the event.
- Teams also had the opportunity to sign up for 15-minute meetings through Google Hangouts with alumni who worked for relevant companies (e.g., Google) or had started their own venture. Participants shared their projects and ideas with the mentors, and the mentors will give feedback on business viability and direction. These mentor-participants interactions can provide a temporary cognitive apprenticeship for students as they can see how real designers and entrepreneurs rationalize their decisions.
- I used a card game to teach participants about the design and entrepreneurship process. Physical cards have been used as a source for inspiration in innovation activities (Carneiro, Lago, & Paulo, 2011; IDEO, 2003; Miemis, 2012; "The Bootcamp Bootleg," n.d.). I awarded points to teams that completed tasks from the cards. Some cards featured a quick response (QR) code to provide participants with

more resources. Teams could scan the QR code and receive a link to a Web page related to the task. The Web page would contain articles and tools that were useful for completing the given task. To receive points, teams would email me a picture or video providing proof that the task was completed correctly. There were five different levels of points of the card game. As the levels and points increased, the tasks were more important to the process, or required more in-depth work. Figure 3 shows an example of cards used in the game. Out of the 27 cards, 13, listed in Table 1, were related to entrepreneurship and lean startup concepts. To provide an incentive for the teams to take part in the card game, the team that had the most points at the end of the event received $400 of start-up seed funding.

Figure 3. Cards used for the design and entrepreneurship process game

Table 1.
List of thinc-a-thon cards related to entrepreneurship

Level/Points	Tasks
Level 1 – 100 points	• Design a logo • Create a company website/launch site • Interview potential customers • Conduct user research surveys • Start a social media campaign
Level 2 – 250 points	• Rapid prototype your idea • Create a 3D print of your idea
Level 3 – 500 points	• Video pitch • Create a crowdfunding campaign • Complete the Business Model Canvas • Conduct a fieldsheet testing session
Level 4 – 1000 points	• Use a PechaKucha pitch style (20 slides, 20 seconds per style)
Level 5 – 5000 points	• Go Viral! (Get 100 Facebook likes, Twitter followers, or YouTube views)

To increase motivation and participation, I announced before the event that the winning team would receive funding to join the university's annual Silicon Valley trip to meet with

entrepreneurs and venture capitalists, as well as a four-month membership to a local student incubator. Goldhammer (2014) mentions that "prizes are not simply a means to crown a winner, but a powerful and successful approach to building a community of innovators focused on pressing societal issues" (para. 1). I asked entrepreneurs in the community to serve as judges to choose the winners of the prizes. Judges evaluated teams according to the following four criteria (weighed equally): business model (e.g. can the idea make money?), customer validation (e.g. did the team identify customers and get out and talk to them?), technical (e.g. is there a functional product or in-depth prototype?), and design (e.g. does the idea deliver a captivating and memorable user experience?). The judges picked a team that created a device called Pedal that, when paired with a mobile application, could allow students to rent bikes on campus. Other projects included a mobile application for determining the number of spaces remaining in the parking decks on campus; a low-power digital board at bus stops for displaying real-time bus information, news, and relevant events; and a mobile application for helping students find recipes that use ingredients they already have.

Methodology

Research Participants. Participation in the study was not a requirement for involvement in the event. Thirty-three students attended the event, however, only 30 students completed the surveys (four were not completely finished) and ten students participated in an interview.

Data collection. Both quantitative and qualitative methods were used to provide triangulation for this study.

Surveys. Before teams presented their projects to the judges, students were given the opportunity to complete a survey about their experience participating in the event. Students could also complete the survey after the event was over. The survey captured demographic information

about the students and their reasons for attending the event. The survey used a 5-point Likert scale for participants to rate their views on collaboration, their satisfaction and frustration with the event (Rogers, 2012), and the effectiveness of the card game and overall event. The surveys also had open-ended questions that asked about moments the participant enjoyed and found inspiring (Rogers, 2012), how the event altered their view of their or their team members' disciplines, and what skills they began to develop by participating in the event. 53% of survey participants were women and 47% were men. 3 participants were graduate students. Data collected from the survey was analyzed using descriptive statistics. Table 2 and 3 displays the breakdown of survey participants by discipline and year in school.

Table 2.
Number of Survey Participants by Discipline

Discipline	Number	Percentage of Whole
Engineering/Computer Science	13	43.3%
Science	3	10.0%
Art/Design	8	26.7%
Business	5	16.7%
Other	1	3.3%
Total	30	

Table 3.
Number of Survey Participants by Year in School

Year	Number	Percent of Whole
1st Year	2	6.7%

2nd Year	7	23.3%
3rd Year	12	40.0%
4th Year	6	20.0%
5th Year +	3	10.0%
Total	30	

Interviews. I conducted one-on-one semi-structured interviews with ten participants to get a more in-depth understanding of their experience. I interviewed five men and five women. Six of the interviewees were from engineering or science majors, two were from art or design majors, one was a business major, and one majored in human development. I used an open-ended approach for the interviews that focused on 'why' questions as opposed to traditional 'what' questions. I asked participants an initial question, and then asked follow-up questions. I based the follow-up questions on statements the participants had made in their answers to previous questions (Mann, Alba, & Radcliffe, 2007). I specifically encouraged participants to discuss their experiences collaborating with students outside their disciplines, the team process that developed, any conflicts they encountered, and how they had resolved those conflicts. Participants also had the opportunity to expand upon their responses from the survey, especially relating to moments that brought enjoyment and inspiration, their experience with the card game, and skills they learned from participating in the event. An outside source transcribed the interviews. To identify patterns and themes in the data, I used the grounded theory approach to analyze the transcripts. Grounded theory, a widely used qualitative method, moves beyond describing a phenomenon to generate a theory of participant behavior based on the data (Charmaz, 2006). Using grounded theory, researchers can closely oversee the research process

and gain the analytic power necessary to discover interesting patterns in the data (Charmaz, 2006). Mayan (2009) proposes that "the only way in which everyday social life and theory can be closely related is if theories are induced from the data" (p. 47). Instead of searching the data for preconceived themes, researchers uncover themes that emerge organically. I used NVivo to code the interviews, and formed those codes into broader categories to advance conceptual understanding (Charmaz, 2006).

Data Analysis.

1) What attributes of an entrepreneurship practice field do students find engaging (especially students that aren't pursuing entrepreneurship)?

The quantitative and qualitative data both confirmed that elements of the people, place, and program framework engaged students in the entrepreneurship practice field. Table 4 summarizes the survey data on participants' characteristics, and Table 5 summarizes the results of the Likert questions.

Table 4. Participant characteristics from survey responses

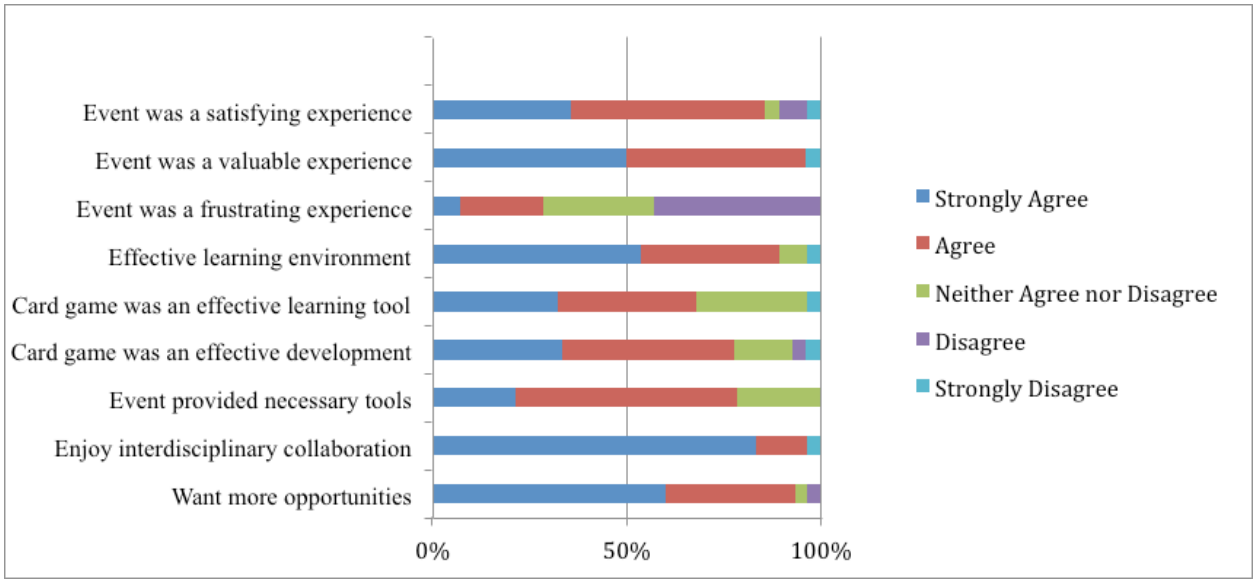
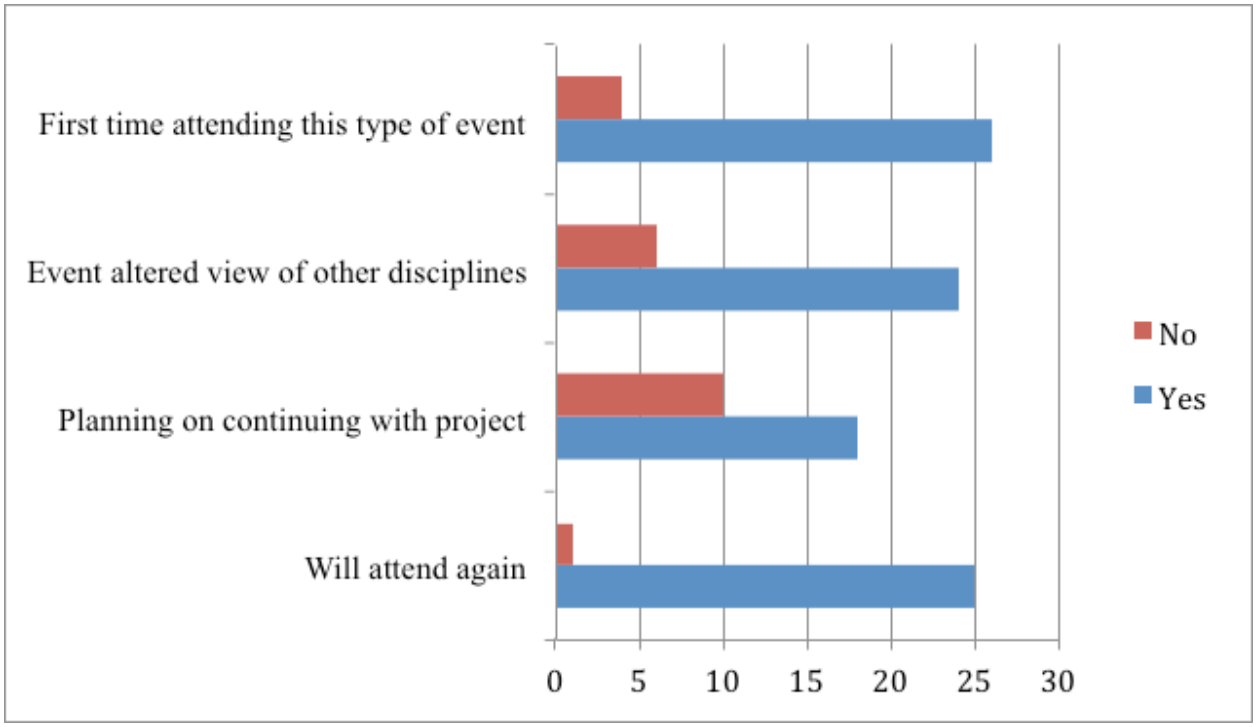


Table 5. Survey results from Likert questions



People

Nearly all of the students (97%) enjoyed collaborating with students from different disciplines, and wished there were more opportunities on campus to do so (93%). The event succeeded at attracting a wide variety of students. One of the goals of the event was to attract students who had not previously participated in a make-a-thon or hack-a-thon and were not interested in starting a business and expose these students to design activities. I accomplished this goal: 87% of participants were attending this type of event for the first time, and only 10% of the participants planned to start a business after graduation. Most of the students attended the event because they were interested in the topic (87%), wanted to practice design (57%), and/or wanted to collaborate with others (70%).

Many of the participants (80%) said that the event had altered their view of their major or their teammates' majors. When asked why, most participants said that they had gained a new perspective by working with students with different mindsets. Participants also reported an increased awareness of other disciplines through responses such as "I did not know how cool computer science was," "I just have more respect for design and business majors," and "business majors are also artistic". During an interview, one participant mentioned having being pleasantly surprised by the number of women at the event because she perceived the business and technology fields as "male-dominated". Another interviewee, who was a graduate student, mentioned having been inspired by a younger teammate because the student "had so many good ideas, fresh ideas."

The most common challenges teams encountered were missing expertise due to a missing student from their team. The teams met this challenge by using online resources and assistance from the mentors. The length of the event may have been too short for any major conflicts to

occur. The small team size may also have contributed to the lack of conflict. The relative lack of conflict may also be partly attributable to the fact that students' participation was voluntarily, rather than a class requirement (Khorbotly & Al-Olimat, 2010).

Place

Six survey respondents indicated that interacting in the physical environment was an element of the event that brought enjoyment and inspiration. Many interviewees described using the writable walls for brainstorming and team planning. The open space in the library helped foster community among the teams despite the competition structure. As one interviewee said, "All the groups were near each other and we could easily go and talk with them and see what they were doing, and having, like, the 3D printer next to us, and even though we didn't use those things, just seeing it and being exposed to it, that type of environment was really nice, the openness of it all."

Program

Additional elements of the event that survey respondents found engaging were team accomplishments and interactions (15 times respondents), the mindfulness session (8 respondents), working with mentors or learning from popup classes (6 respondents), interaction in the overall community (6 respondents), participating in ideation (4 respondents), and a sense of individual accomplishments (3 respondents).

The card game successfully provided resources that students could use to learn design thinking without lecturing. 72.4% of participants felt the card game helped their team utilize design thinking tools (3 participants didn't respond to this question) while 65.5% of participants felt that it helped them learn more about design thinking (2 participants didn't respond to this question). In addition, students felt that they had learned many skills that hadn't learned in their

classes (83%, 2 participants didn't respond to this question). Student responses about skills they began to develop by participating in the event fell into five categories: communication (4 respondents), entrepreneurship (8 respondents), collaboration (7 respondents), creativity (2 respondents), and technical (2 respondents).

2) How can an entrepreneurship practice field support the continuation of projects beyond the event?

The survey results show that this type of event can help students think beyond the classroom and approach projects not only as assignments designed to earn a good grade but also as the beginnings of businesses they could start. 60% of participants planned to continue working on their project after the event (2 participants did not answer this question). A member from the winning team said that the team had begun meeting weekly, and the participant had personally met with the founder of a local incubator to receive advice on next steps. Advocates of developing an entrepreneurial mindset in students stress that projects should be pushed past being good enough to publish a paper or get a good grade (Carryer, n.d.). Even if ventures ultimately fails, students learn from the experience of attempting to launch a business and improve their odds of succeeding in their next endeavor (Minniti & Bygrave, 2001). Students who were not planning to continue their project cited an inability to find the correct people with the necessary skill, and a lack of interest from other team members. These results demonstrate a need to develop resources to help students in find new team members after the event. Some interviewees mentioned that their team intended to reunite at upcoming design events to work on new ideas.

Design discussion. The most common feedback from students was a desire for the event to have been longer. They wanted more time to develop their ideas and build more detailed

prototypes. The common suggestion was to extend the event through Sunday (it originally started Friday evening and ended Saturday evening). The lack of time could have also contributed to the judges' opinions that the teams generally didn't spend enough time on vetting their ideas with real customers. In addition to increasing the length of the event, the card game could be modified to focus more on customer development. Some tasks related to customer development (e.g., interviewing and surveying potential customers), but the points associated with these tasks were minimal. The card game could offer more opportunities for customer development and give more points for completing these tasks.

Another issue that was uncovered during the event was the high dropout rate before and at the beginning of the event. While 33 people participated in the entire event, 69 people originally registered. Prior to the event, 16 people canceled, and there were 15 no-shows at the beginning of the event. Five people also didn't return for the second day. While I expected cancellations, the high number of no-shows caused team construction issues. Before the event, I had arranged participants into teams equipped with three or four students from diverse fields, so the no-shows and dropouts meant that some teams had to either combine with other teams or make do with only have two students. The most common obstacle that teams reported encountering was lack of expertise. The high no-show rate also created budget issues regarding food preparation. To counter this issue, organizers could be create an application process or institute a small fee to ensure that students will only sign up if they are committed to attend. Creating a Facebook event page for sharing ideas prior to the event could help establish a community among the participants and decrease the number of no-shows.

Many companies that facilitate rapid design activity, not only provide access to creative spaces for collaboration and ideation, but also to makerspaces or a product realization lab ("Go

Inside Google Garage, The Collaborative Workspace That Thrives On Crazy, Creative Ideas," 2014). These spaces allow participants to use advanced tools such as 3D printers to build quick but complex prototypes. A future event could facilitate the use of the university library's makerspace, equipped with three 3D printers, a laser cutter, microcontrollers, and hand tools. Training would be provided for participants unfamiliar with the tools.

Implications for future research

Future research should cover a deeper investigation into how communities of innovation form during a rapid situated design activity. To begin investigating this question, it is necessary to uncover the steps involved in the development of communities of innovation, how the just-in-time learning tools (card game, popup classes, and mentor sessions) facilitate scaffolding in these communities, and how participants in the communities overcome challenges.

The development of design principles is also necessary to guide practitioners when developing rapid design events. McKenney, Nieveen, and Van den Akker (2006) proposes that "design principles are not intended as recipes for success, but to help others elect and apply the most appropriate substantive and procedural knowledge for specific design and development tasks in their own setting" (p. 73). To uncover design principles discovered through investigation of the thinc-a-thon event, this pilot study would become a part of a larger educational design research study. Educational design research is defined as "the iterative development of solutions to practical and complex educational problems [that] yields theoretical understanding that can inform the work of others" (McKenney & Reeves, 2012, p. 7). Design research differs from traditional research in that design features combined with theory create new contextually grounded theories (Barab & Squire, 2004). Design research promotes long-term

engagement and collaboration with practitioners in a context. Each iterative cycle leads to insights that determine adjustments for the next experiment. Insights discussed in the results and design discussion will help inform the next iteration of thinc-a-thon. Use of design research will advance the knowledge of situated activity in teaching entrepreneurship, how communities of innovation are formed in these environments, and how just-in-time learning tools influence this development.

Conclusion

This paper investigates the development of rapid entrepreneurship practice fields to engage students in developing entrepreneurship mindsets and skills. Using the framework of people, place, and program, a community of innovation was formed that fostered repeated situated activity and emulated real practice. The thinc-a-thon event discussed in this paper used elements of the framework to engage students in entrepreneurship and provided opportunities for the continuation projects after the event. Participation in the event taught students design and entrepreneurship concepts they wouldn't have otherwise learned in their studies, altered their view of other disciplines, and gave them the confidence to work on business ideas (new and old) after the event. While many graduates from fields considered a part of the creative class won't start their own businesses, the development of an entrepreneurship mindset and use of the associated tools will be essential as they solve the grand challenges of society.

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