KICKSTARTER'S ROLE IN INDUSTRIAL DESIGN EDUCATION

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ABSTRACT

This paper provides a basic explanation of the Kickstarter platform and reports on the findings from five interviews conducted with design students who openly shared what they have learned from their experiences with Kickstarter projects. It also summarizes a successful design student Kickstarter project, the Tessel Jet Pack Backpack.

The results of this research indicate that design students are primarily motivated to engage in Kickstarter projects to validate themselves as designers. Secondarily, students found these projects exposed them to new learning in marketing, finance, manufacturing, product delivery, and the complete "start to finish" framework of a product development process. Surprisingly, they also indicated that the experience only reinforced their pre-existing design training and did not significantly add to it.

Despite the student learning that occurs throughout a Kickstarter project, we do not recommend that Kickstarter supplement or supersede design education because of the inherent real-world consequences. However, professors should consider how intrinsically-motivated, self-determined projects that build young designers' self-esteem can be used to enhance current design studio courses.

Keywords: Industrial design, design education, self-efficacy, student motivation, designer validation

1 INTRODUCTION

As design educators, we have observed a growing trend in the number of students who choose to participate in entrepreneurship activities such as Kickstarter projects while enrolled in traditional university courses. Over the past four years, approximately 25% of the industrial design students at Brigham Young University have chosen to run their own Kickstarter project or participate in a Kickstarter class offered by the business school on campus. Design educators should understand the implications of this trend and how it may affect their students and their curriculum.

1.1 Kickstarter

Kickstarter, founded in 2009, is a web-based global crowdfunding platform that helps individuals fund creative projects [1]. This platform provides a vehicle for individuals to design, market, fund, manufacture, and ship a product they have designed. Kickstarter is part of a larger phenomenon known as crowdfunding, or the practice of micro-financing blended with the concept of crowdsourcing. Crowdfunding is a growing class of fundraising, facilitated through online sites that connect project founders to potential consumers [2]. An early and broad definition of crowdfunding is given by Lambert and Schwienbacker as "an open call, essentially through the Internet, for the provision of financial resources either in the form of donation or in exchange for some form of reward and/or voting rights in order to support initiative for specific purposes" [3].

Kickstarter uses a reward-based form of crowdfunding, wherein backers (funders) are offered a reward for supporting a project. These rewards are varied and usually are divided into levels of support, beginning quite low but with increasing rewards as incentive for increasing pledge amounts. Kickstarter follows an all-or-nothing model, which means if the project does not reach its funding goal, the backers are not charged for their pledge and the founder receives no money.

Kickstarter is a global entity based in Brooklyn, New York, U.S.A. At the time of writing, 741 projects have been successfully funded with a total of $1,534,643,187 pledged. 44% of projects have reached their funding goal. Of the 66% of unfunded projects, 12% run their course having received no pledges at all [4].

1.2 Student Motivations

We first became interested in the student motivation behind participating in Kickstarter in 2013 while observing a third-year student. He developed a personal project for Kickstarter, the Tessel Jet Pack Backpack, in addition to his industrial design schoolwork. We were both concerned and interested. On the one hand, Kickstarter projects are large, time-consuming, stressful efforts that take time away from coursework. What's more, Kickstarter is trendy—with the consistent stream of stories and excitement surrounding the projects, it is rare that a design student has not contemplated running their own Kickstarter campaign. On the other hand, we were interested in understanding the strong motivating factors compelling students to participate in large projects in addition to their coursework.

While other researchers have described ways to integrate Kickstarter and entrepreneurship into design education [5], [6], we sought to determine what drives this motivation and whether or not Kickstarter is beneficial to design programs. Our initial assumption was that Kickstarter is a powerful vehicle to assist students in their design education and should be utilized by educators.

Understanding student motivations will enable design educators to strategically manage their course structures to remain relevant to the evolving design student. It will also allow educators to create courses and assignments that are as compelling as a Kickstarter project, pushing students to create their best work.

2 METHOD

In 2014 and 2015, we conducted three informal interviews with the student who created the Tessel Jet Pack Backpack. We wanted to understand his project, what he had learned, and whether he thought his Kickstarter experience was beneficial to his design education. We also interviewed four other Brigham Young University students who participated in Kickstarter projects while enrolled in classes. The students interviewed participated in a total of seven projects; five were successfully funded and two were not. We interviewed one student three times for about an hour each time, and interviewed the other students for about fifteen minutes to one hour.

In these interviews, we asked the students the following questions and noted the responses:
1. Why did you want to participate in a Kickstarter project?
2. What did you learn from your Kickstarter project?
3. Why did you do a Kickstarter and attend classes at the same time?
4. Did your Kickstarter project help you to get a job or internship?
5. What was your motivation for participating in a Kickstarter project?

These questions all sought to draw out the foundational design education value of a Kickstarter project, both by asking explicitly and by asking about hypothesized motivations. The final question became the crux of the interview, and often required persistence and follow-up questions for students to fully answer, suggesting that students are not consciously aware of their own motivations. Findings from these interviews and a case study of the Tessel Jet Pack Backpack are presented in the following sections.

3 STUDENT MOTIVATIONS AND LEARNING

Through our student interviews, we determined that validation of the student's design abilities is the primary motivation for participation in Kickstarter. In addition, the students learned a variety of lessons related to design: working with team members, online communication, finance, manufacturing and distribution, and a "start-to-finish" business experience. We also found that Kickstarter projects allow students to polish their existing design skills but do not significantly aid them in acquiring new ones.

3.1 Validation

We determined that the primary student motivation to participate in a Kickstarter project is the validation of themselves as idea creators, product makers, and in general, respected designers. A successful Kickstarter project promotes a feeling of self-efficacy.

The psychologist Albert Bandura explains that the most persuasive mechanism to provide an individual meaning in their life is their judgment of efficacy [7]. Students referred to the confidence buzz they received when strangers from countries they've never heard of validated their work with a monetary commitment, indicating that their idea is of real worth—much more compelling than a "like" or a "favorite" in an online social setting. These strangers, responding to their project, provide a stream of highly valued reinforcement of their competencies as a producer and designer. The students expressed that such a response from a blind peer review is more validating than feedback from a professor who knows them personally. They become accountable to the real consumers of their product—success or failure is more important than a letter grade.

Motivation experts such as Deci and Ryan also support this notion. They would argue that self-determined events or behaviours that conduce *feelings of competence* enhances "intrinsic motivation for that action because they allow satisfaction of the basic psychological need for competence [8]." Importantly, they maintain that *feelings of competence* will *not* enhance intrinsic motivation unless they are accompanied by *a sense of autonomy.* In other words, "This project was my decision, and the consequences, positive or negative, are also my responsibility." Kickstarter projects are self-determined; intrinsically-motivated projects that conduce feelings of competence and consequently provide self-efficacy as young designers and businessmen and women.

3.2 Build Your Teams Wisely

A common topic that emerged in the research was the need for interpersonal skills involving co-campaigners or team members. Design students identified two types of students involved in product-oriented Kickstarter campaigns. One type are students motivated by the prospect of generating personal capital with the least amount of effort. They focus primarily on the monetary transaction and employing newly-acquired business knowledge in a dynamic, "real life" setting. These students are characterized by their interest in all things fiscal and only a mild interest in the quality or type of product. Business students typically fall in this category.

The other type of student is product-oriented, motivated by the possibility of seeing their concept become a realized product. This type of student is usually less skilled or interested in the operational aspects of the project, but focused on the quality of the product. Design students typically fall in this category.

In the students' experience, a high level of frustration occurred when members of a campaign were comprised of both transaction-focused students and product-focused students, especially where one type had little interest in the other's focus. On the other hand, a high level of passion and achievement was realized when business students respected and valued good product design and the design students embraced the financial and logistical aspects of the campaign.

3.3 Online Communication

Students also spoke about the difficulties and nuances of online communication. To be successful in a Kickstarter campaign, a large online audience needs to be reached. The majority of Kickstarter campaigns include a video that explains the product, the team, and why the effort matters. Students learned that a visually engaging video without a strong narrative does not necessarily lead to success, and vice versa. For example, one student engaged the services of a notable local videographer to produce the video for their new campaign. This was a follow-on campaign to their first highly successful campaign and they were full of confidence. However, this new campaign failed to be funded. Upon analysis, they concluded that although the video was well-made, it did not convey the product's narrative appropriately. They rapidly adjusted the video's narrative, focusing on the essence of the product itself and eliminating much of the creative asides found in the first video. They remade the video themselves in the back of a classroom and re-launched the product, which was then successfully funded. As studio classes typically

emphasize, while the quality of the communication is important, the quality of the product's narrative is even more so, and is quickly rewarded or punished in a Kickstarter campaign.

Getting eyes to view a campaign is also difficult. Many students rely on family and friends to initially back their campaign to demonstrate an attraction to the project and begin the funding process. Since successful funding typically happens within a few days of launch, a project needs hundreds or thousands of early backers to be successful. This is beyond the scope of most personal networks. Consequently, students learn that they have to engage directly with online bloggers and product-oriented websites with large audiences to lead their viewers to the Kickstarter campaign. This requires the product to be useful, useable, and desirable, or the bloggers will not promote it. Additionally, the online elite easily dismiss photography, graphics, and product design and narrative if not professionally presented. The project must somehow be outstanding for bloggers to feel it worthy of forwarding to their audience.

3.4 Finance, Manufacturing and Distribution

Design students were surprised by the amount of attention required by the various aspects of running a business, topics which are not typically addressed in design education. A great product alone does not make a successful campaign. Working with real money, customers, vendors and governments is both stressful and time-consuming. Design students are typically not familiar with tracking money for travel, materials, taxes, fees, shipping, prototypes, development, visual communications, bloggers, rent, equipment and so on.

Many of the products are manufactured by the students themselves, while others engage full-time manufactures, typically overseas, to produce their products for them. In either scenario, the students quickly discover that making one to ten prototypes is very different from manufacturing hundreds or thousands of the same product. Previously-held notions of product quality and consistency, manufacturing time and material cost, as well as product storage and distribution, are rapidly adjusted to reflect reality.

When all the manufacturing issues are resolved and the product arrives, the students face the challenges of shipping. Space requirements for thousands of boxes, placing the correct address of each customer, and purchasing postage for each package take more time and money than anticipated. Again, this is not a topic that is typically covered in design studies, but is an essential part of running a business.

3.5 Start-to-Finish

During the interviews, the design students proudly referred to the broad learning that occurred while participating in a complete, start to finish business experience. The students listed a number of new topics or skills they were required to address to complete a campaign. Product design was listed first, but students also included graphic design, web design, packaging design, photography, distribution, customer service, quality assurance, legal issues, business strategy, pricing, business issues, accounting, taxes, marketing, advertising, social media, editing, retail connections, pitching to investors, material sourcing, expense management, and equipment maintenance. While these topics are all important aspects of business, the majority of topics listed are not the direct focus of industrial design studies.

Students expressed that Kickstarter helped them develop the design skills they had already acquired through university classes, but did not significantly add new skills. Kickstarter helps students polish low-level design skills without strongly contributing to higher-level critical thinking, which should be an aspect of design education.

4   CASE STUDY: TESSEL JET PACK KICKSTARTER PROJECT

The Jet Pack began as a student-initiated design project from a third year student. He began with a backpack concept that featured a tessellated panel that makes up the body of the pack. When loaded, these tessellations create a unique faceted effect on the surface that conveys the shape and volume of the pack's contents [Figure 1].
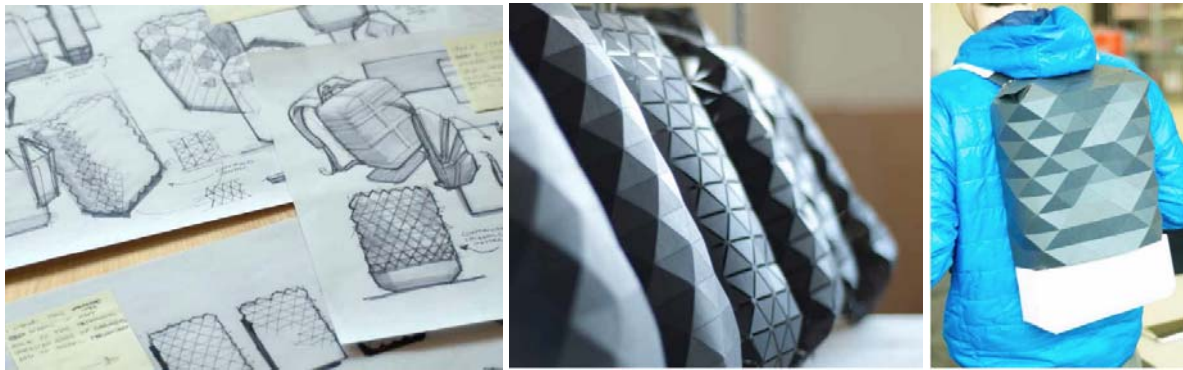
Figure 1. Sketches and early prototypes of the Tessel Jet Pack

He worked for months and generated many design iterations in paperboard, sheet foam, and fabric. During this time, he received informal critique and input from faculty and classmates. He was able to recruit two other students to his project, one a design studio classmate and the other an acquaintance studying business. Throughout this process, he divided his time between working on his assigned projects and this side venture.

As the project progressed, the small team gained access to an industrial grade sewing machine and developed prototypes of high enough quality to allow simple product and market testing. Despite having no training in product development and lacking any manufacturing process experience, the team began looking for possible manufacturers and preparing their project for a Kickstarter launch.

This preparation included creating an appearance of legitimacy. As three inexperienced students, they knew it was important to portray themselves as a reputable and reliable entity with a high quality product. They crafted manifestations of a developed brand through creating a website, orchestrating a sustained social media campaign, and developing a strong brand story. This narrative helped them establish and communicate product values through their pitch to prospective backers.

With these measures in place, the three students launched their Kickstarter campaign. After 33 days they had exceeded their goal of $17,000 by over 300% through garnering 846 backers reaching a pledge level of $56,045 [Figure 2]. However, at this point they had not yet received a finished sample from the manufacturer. Predictably, their pack proved more difficult to produce than they planned, especially the tessellated panels. Seven months and many factory samples later, they had a satisfactory production-ready prototype. During this development time, they learned the importance of open and transparent communication with backers and spent considerable time with customer service issues. The initial shipment of 1200 Jet Packs arrived from the factory in Asia almost one year after launching the project. The team then faced the issues of distributing their packs to all 50 US states and 20 countries.
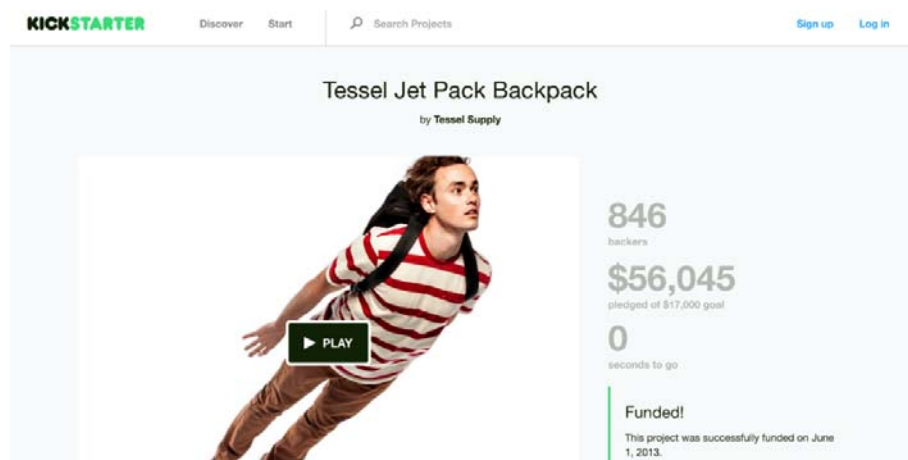

Figure 2. Kickstarter Funded! page of the Tessel Jet Pack

The student reported that the success of the Tessel Jet Pack verified and validated his skills as a designer. He made connections to other designers and businesspeople through this experience that he could not have made otherwise.

However, this project has also made it more difficult for this student to get an industrial design job with some soft goods manufacturers. Because of the success of the Tessel business, this student is often considered a competitor to a potential hiring company in a similar market. Additionally, his focus on soft goods lead him to neglect skills in other areas that traditional industrial designers have, such as CAD modelling.

5 KICKSTARTER'S IMPACT ON DESIGN EDUCATION

All of these things considered, is Kickstarter a friend or foe to industrial design education? Certainly, it can be a foe by taking away from time spent on class assignments and, in rare cases, by making it difficult for the student to get a job in their project's sector. However, it can be also be a friend by encouraging students to pursue projects that interest them and by giving them opportunities to polish design skills, learn business and communication skills, work in groups, and take on real-world responsibility and challenges.

The personal validation from a Kickstarter project is clearly potent enough to drive busy students to take on enormous amounts of high-risk responsibility. We originally hypothesized that the strong motivating factors of Kickstarter lend it as an ideal venue to further design education. However, because of the results of the student interviews, we have determined that Kickstarter is not a good tool for professors. One reason for this conclusion is that Kickstarter requires students to face real-world consequences in the success or failure of their product, which should not be part of education. Education is a safe place for students to make mistakes and gain a foundation before they enter the "real world" of design. While some students are ready to face these challenges while they are in school, this is not true in every case, and many students may not be comfortable with inherent difficulties and consequences. However, we recognize that receiving positive feedback from real consumers is a key aspect of the validation motivating the students.

If we can find ways to motivate our students in the classroom the same way these Kickstarter projects motivate our students, we can expect a higher level of commitment and persistence to projects. This will require exploring meaningful sources of validation beyond students' peers and professors such as design shows, portfolio-sharing websites such as Behance and Coroflot, or design reviews from industry professionals. These venues offer validation from outside sources without the inherent difficulties and consequences inherent in a Kickstarter project.

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