Evolution to Adaptation:

A case study on the development of a new program in socially responsible product design

Abstract

A fundamental challenge that faces all educators and institutions of higher learning is: How to educate students to prepare them to create appropriate and novel solutions amidst a confluence of rapidly evolving economic, social, and environmental forces that drive a global marketplace? To be economically viable, the next generation of designers will need to be educated with a new dimension: "adaptability". Ironically, a recent informal survey of American design professionals shows an alarming trend towards designers taking an opposite approach as they move to become specialized in an ever-expanding array of design services.

With the responsibility of starting a program, the author has had to wrestle with the issues that face all design programs today, that is, how to adapt. The new program seeks to balance both high design skills and craft with transformative design thinking by activating abductive logic. The paper describes the synthesis and decision making the author made to develop a socially responsible design program. It outlines the curriculum and describes the process of how knowledge is gained and focused in applied learning using the lens of product design. The case study ends with a call for discussion on how experiential learning can create life experiences that serve to fuel students' understanding and application of socially responsible design.

Keywords: Design Education, Product Design, Socially Responsible Design

Introduction

In developing a new product design program, where does one start?

This question confronted the author after accepting a position at Drexel University to develop a new Product Design program for the Westphal College of Media and Design. The answer is obviously important for the future success of the program but is also important for future of product design itself. This opportunity also offers a clean slate for challenging the notion of what a design education is by applying a design process onto the development the program itself.

The Future of Product Design

We are in an era of uncertainty, with myriad challenges facing all of mankind. Consumerism is rampant, causing the environment to spin out of control; humans deplete what little resources the planet has left, at the same time spoiling the precious few that remain. And while we understand the implications of not solving this situation, we stay the course, leaving the problem for someone else.[1] In reality, no one else is going to save us. In light of this, it is easy to ask oneself, "Why does the world need another design program?"

This is not a story of doom and gloom; it is a story of hope and potential where the unlikely answer to "Do we *really* need another design program?" is "Yes, of course." To make this unintuitive leap you must picture a new role for design that brings value to society not through the objects they created for industry and mass production, but through the sharing of design thinking with the masses. This shared activity will allow designers to create solutions for the "wicked problems" that present issues that we have yet to experience.

We have arrived at a moment in time in Man's evolution that Alvin Toffler predicted in his book *The Third Wave*.[2] when man will able to control his own evolution. If man achieves this pinnacle of adaptation, we will own our own destiny.

If design is to survive this future, the new designer must be adaptable, intellectual, empathetic, collaborative, empowered, local yet worldly, with an insatiable curiosity and the will to solve. Most importantly they will not call themselves a designers but "intellectual makers".

Setting The Stage

How do we educate this next generation of designers?

The first challenge in answering this question is to develop a picture of the current state of design education from a local, national and global perspective. A quick survey of American

educational institutions alone shows that a wide spectrum of programs exists. At best, what emerges is a mosaic of basic patterns and generalities. At worst is a realization that design education in America has become commoditized for industry. Conjointly, there is a huge body of professional, educational and critical opinion on the state of design and design education. With so many voices shouting at once, it is difficult to hear a clear and singular voice. What can be heard is the prevailing sentiment that design is in flux and at a crossroads, or, as many designers like to say, "at the intersection."

The Industrial Design Society of America (IDSA) 2006[3] survey of 181 design professionals lists over 40 skills most sought after in graduating design students, ranked in order of importance. (Figure 1) Not surprisingly, the list reflects an enormous number of personal attributes, experiences, knowledge and skills, all of equal importance. What is read between the lines is that design has become segmented into specialties, each requiring a slightly different but specific skill set. The skills most desired in graduates equate directly to what can be sold to industry partners. (It should be noted that to date, most industries have a poor track record for keeping the best interest of design or mankind in mind. Now that industry needs to change, product design is unprepared to lead industry to a new value.)

The second challenge is the debate over the origins of design. Design theorist Richard Buchanan describes the complexity through four possible beginnings.[4] The first is that design began in the early twentieth century with the formation of the discipline of design thinking; second is the opinion that design began with the industrial revolution and man's quest to mass produce goods; the third argues that design began in the prehistoric period with the creation of tools and cave paintings by primitive human beings. Finally, some argue that design began with the formation of the universe as the first act of God, planting the seeds of man's desire to imitate his creator. Regardless of your own personal belief on the origins of design, several critically important observations can be made from tracking the history of man's relationship to design:

- Man's quest for speed has played and continues to play a huge factor in our evolution, adaptation and response to design.
- Man's trust and dependence on technology has crossed a chasm such that western (civilized) man cannot go backwards. Technological man could not survive without technology.
- Design as an enterprise took a monumental shift around 1930, when designers moved from being spokesmen for society to spokesmen for business, thus, shifting design's focus from representing society to manipulating society. (Figure 2)

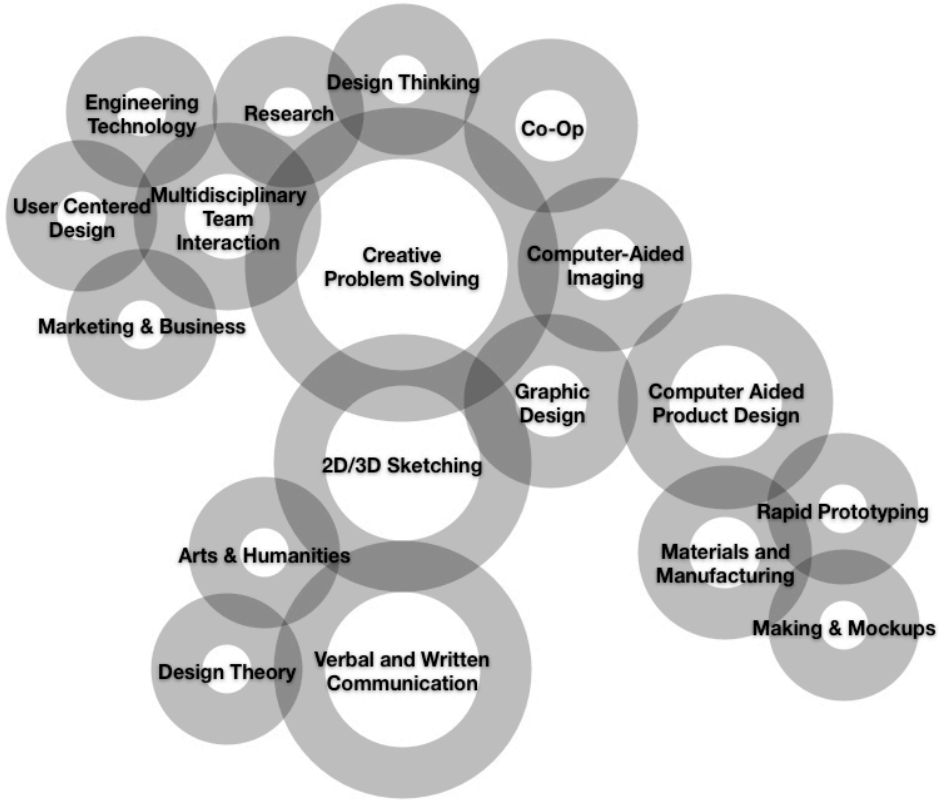

Figure 1

Relative scale of importance and overlap of interrelationship to the top twenty attributes American Design Professional would like a graduating industrial design student to possess. What stands out by looking at this data in graphical form is that after the top three, all other attributes are of equal weight. Adapted from the IDSA survey of 181 design professionals

For this paper, and the for the development of the program, the question is not so much about when design originated or what its current state is but, ultimately, how long will humans need and desire tangible objects? Is there a point in the future when product design no longer has value to industry and, more importantly, society? We see already a clear trend in companies like IDEO and frog design which have been slowly weaning themselves away from product development and reinventing themselves through other offerings.

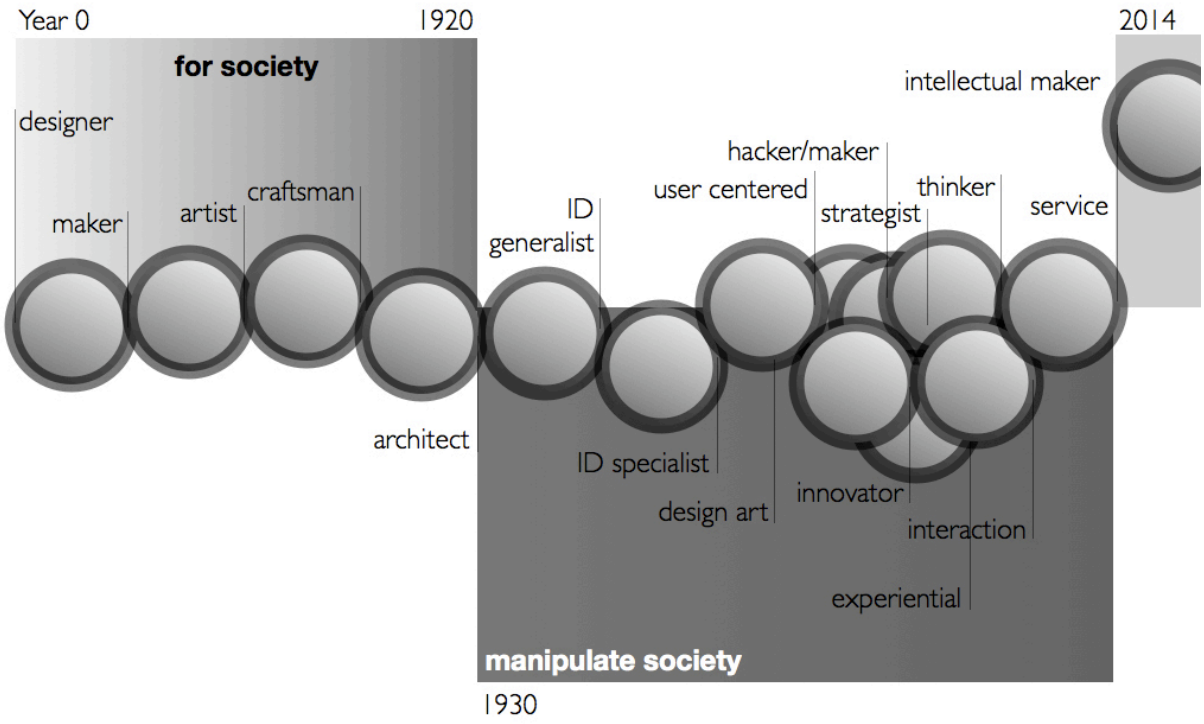

Figure 2

Figure 2 shows a generalized progression of design from simple maker to specialist.

The Challenge

What is Product Design's true value? Likewise, what is the value of getting a product design education?

> *"The duty of the educator is to uncover the forces which form society so that the individual, equipped with the knowledge of the processes, may form his own opinion and make decisions about his position in the world"* –Laszlo Moholy-Nagy

A trend in design education has been for programs to develop curricula that attempt to cram in as much design education as humanly possible with the hopes of making their graduates competitive in the market place.[6] This has led to an alarming proliferation of design tracks and concentrations as schools seek not only to attract more students but, to place their graduates in an ever-expanding array of design specialties. What is lost in this scenario is design's core values, as programs become all fluff with no substance, pushing students into specialties before they have had enough time to develop design maturity and experience.

Development

What is the process for developing a unique program at a specific institution?

> *"Nowadays, the passion of design educators seems to be technology; they fear that computer illiteracy will handicap their graduates. Until educators find a way to expose their students to a meaningful range of culture, graduates will continue to speak in a language that only their classmates will understand."* –Michael Beirut

Development of the Drexel program started in earnest in October of 2008. Research included the analysis of known data from IDSA, The Department of Labor and Core77.com. A rigorous review of 15 American and 5 international Industrial/Product Design programs was conducted. In conjunction with the school SWAT analysis, 5 distinguished design professionals were interviewed for their personal vision of the future for design. The stories were collected and used in developing an affinity diagram of key learning's. This was the foundation for developing a reality of the problem space, and directly influenced the development of the program.

Before a curriculum and sequence could be developed, it was important to have three ideological pillars as the foundation for the pedagogy. These were defined as objective, reality, and pedagogical philosophy.

Pillar 1: Objective

To create a transformative experience for students by rethinking the vocational model of design education and changing it to a ubiquitous model that puts the studio experience and studio culture as the center. (Figure 3) This position challenges what it means to be pragmatic and to how best to serve the needs of society. The program developed must provide students with a full university experience, offering meaningful exposure to Fine Art, Literature, Science, History, Politics, and other subjects that unite us in a common culture.

Pillar 2: Reality

Developing a new curriculum in Product Design at Drexel represents immeasurable change to the status quo in the college as well as being a potential change agent for the entire University at large. Efforts for educating the University will be needed, as well as contingency plans for times when change represents too large a leap for the university to accept.

Pillar 3: Philosophy

Drexel's Product Design program will focus on producing the next generation of adaptable product designers that are capable of solving complex, human-focused, "wicked" problems and have an understanding that the principal value of design rests in the designers

themselves. The program will emphasize four core values in design: function, style, status, and poetry, as defined below:

Function: Integrating what an object must do with the constraints of making the object, while developing a solution that is appropriate to the task for which it is intended to be used

Style: Using the designer's own experience to harness intuition and to develop an eye for adding intrinsic value in the form of desire and aesthetics

Status: Understanding how objects and solutions fit into humans' lives, the role the objects fill and, ultimately, the value the user gives to them

Poetry: The act of capturing and instilling stories of people's lives into solutions that brings people pleasure, meaning and memories

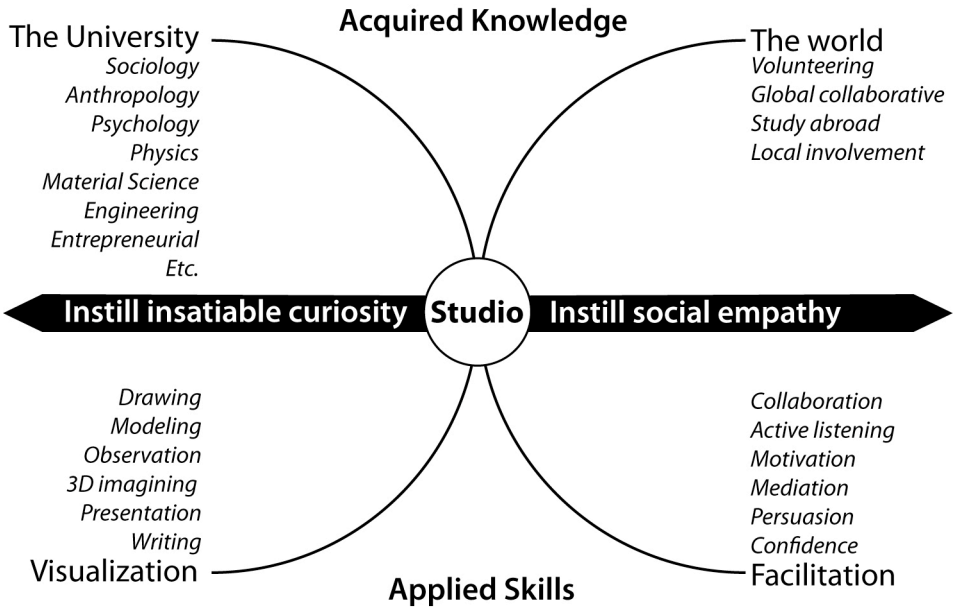

Figure 3

Knowledge and applied skills are gained outside of studio and then activated in studio. Studio acts as the lens to synthesize knowledge gained in the world.

A New Educational Model

With the shift to a new model of the studio and the desire to emphasize the development of secondary attributes in design (Figure 4), a rethinking of the traditional vocational model was required. What was conceived is a model akin to a ubiquitous pool of learning vs. the traditional funnel model of vocational learning. (Figure 5) In the vocational experience, students often get tracked into specific industries based on the sets of skills and philosophy afforded them by their program. In the proposed ubiquitous experience, students navigate

among a range of design philosophies and applications, developing their own personal applications of design, while honing a design philosophy and design image. What becomes important in the ubiquitous model is that students find their passion or affinity, using design as a conduit to that passion. Opposite to the vocational model, students graduating from the ubiquitous education have an infinite range of tracks and can bring design value to new industries, markets or society.

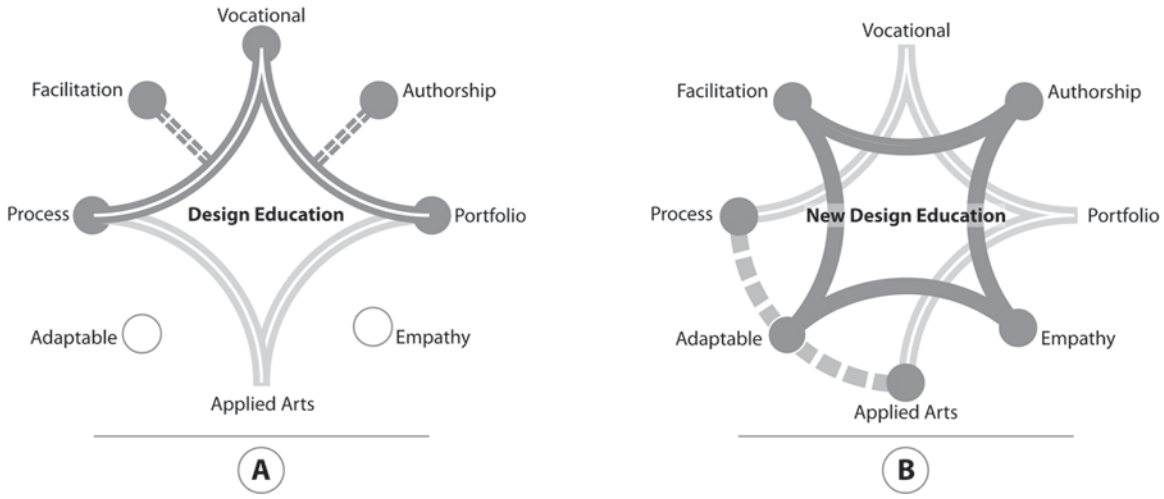

Figure 4

Graphic A shows a schematic of the two common pedagogical approaches offered by design programs today. Graphic B shows Drexel's program shifts the pedagogy to secondary outcomes thus, enabling a new primary of an applied arts-process school.

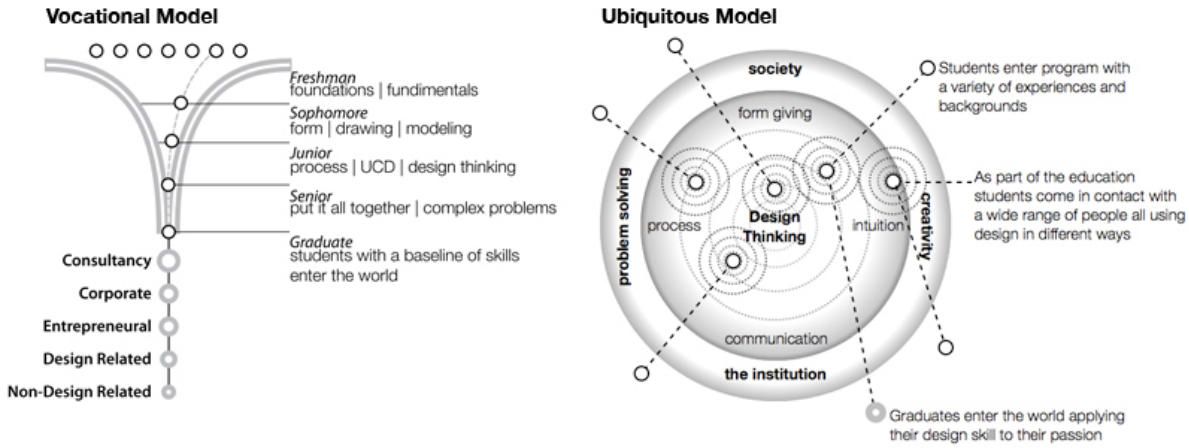

Figure 5

Comparison of the Vocational and Ubiquitous models of design education

To prepare students for the rigors of the new studio model, three personal characteristics should be activated in the course of the early studio experience, they are: caring, volition

and passion. (Figure 6) This will carry students through the more advanced studios and provide them the drive to continue taking on new challenges. (Figure 7)

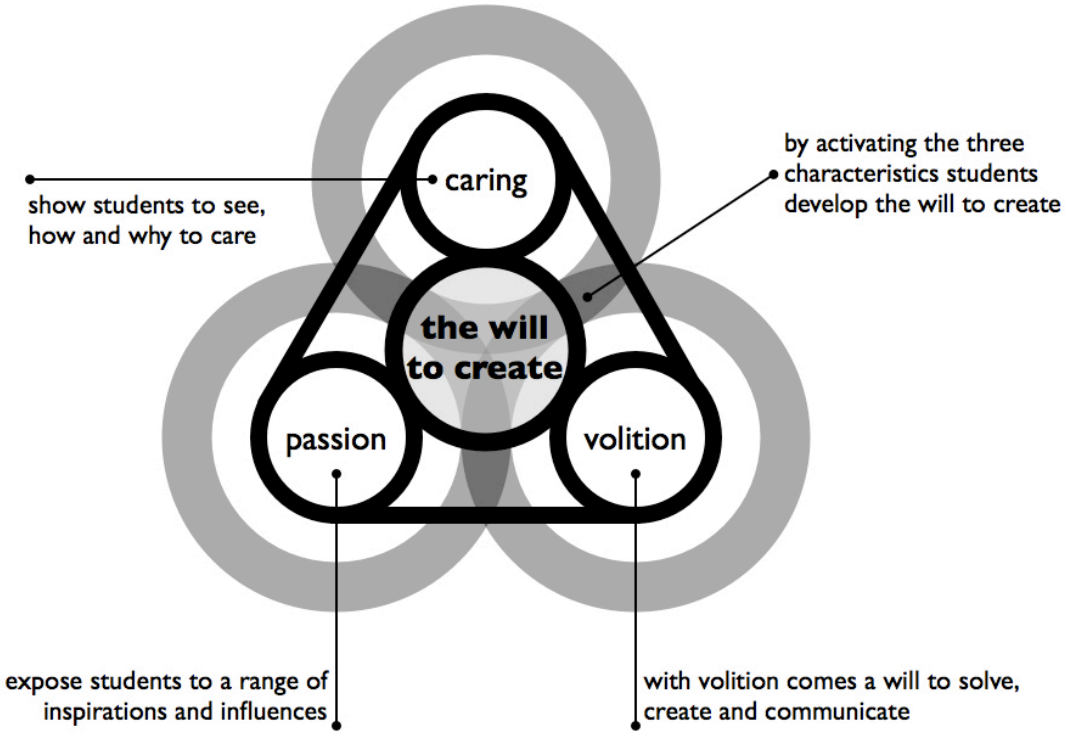

Figure 6

Diagram showing how the will to create gets activated in students by enabling three person characteristics

The Results

How do you move a program from theory to practice?

After completing the development of a new design educational theory and philosophy, the curriculum came together more quickly than expected, and courses were developed to fit the ubiquitous model.

To take full advantage of the university's holistic environment, fifty percent of the curriculum (92 credits) was based on existing courses offered by other colleges at the University. These courses expand the students' mindsets, overall experience, and perspective, offering a wide range of diverse opportunities that augment the designer's worldview. The curriculum allows sufficient free electives to foster interest in other subjects or complete a minor.

41 credits come from existing courses within the design school. These provide foundations in fine arts /design, art history, digital media and photography. Sixteen new courses (54

credits) are proposed as requirements for the major. These are intended to teach students' skills specifically needed in the Product Design profession and the application of a product design process.

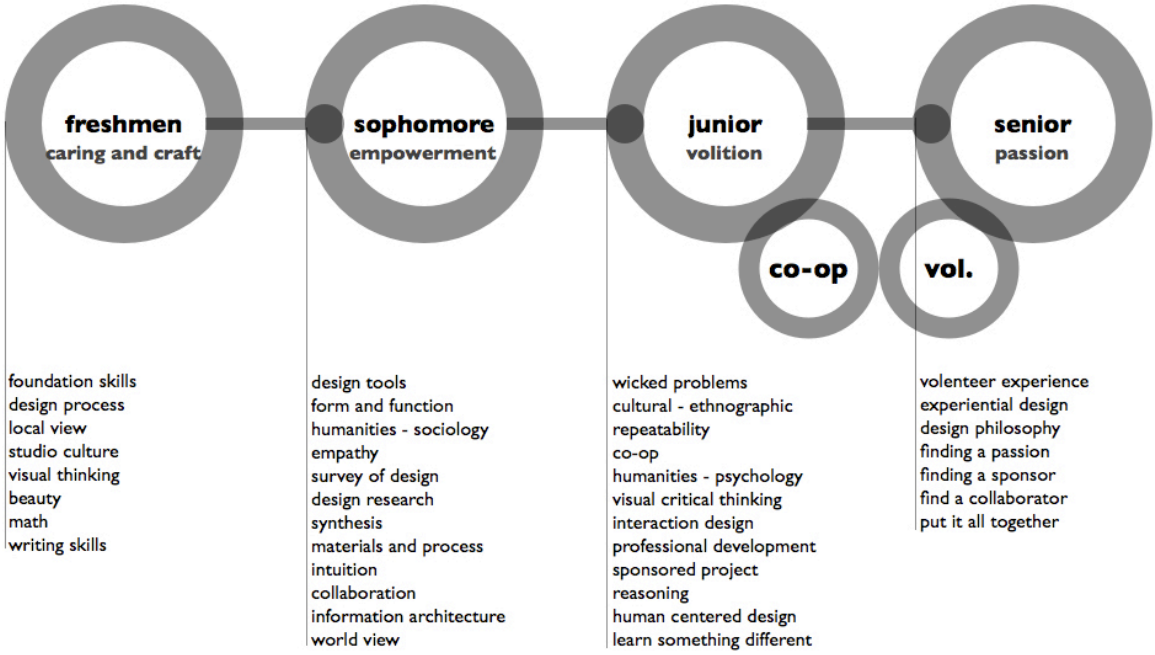

Figure 7

Diagram showing the flow of the 4-year educational experience, each year is dedicated to enabling a specific student characteristic

As mentioned earlier, the studio course is central to the students' education in Product Design. All other courses will serve to build knowledge and experience in subjects and skills to be applied in the studio. (Figure 8)

In this curriculum the three type of courses used are as follows:
Knowledge courses: The building of knowledge and the search for an affinity to ignite a passion. Knowledge course work is inserted at key times to set up applied learning. Students learn with and among the other majors on campus.

Applied courses: Visualization, communication, research methods, design theory, ethics and professionalism. Visualization is split into two distinct learning methodologies: 1. Thinking, which combines rapid sketching and modeling and 2. Communication, which combines 3d tools, writing, presentation development and rapid prototyping. Key to the applied experience is the development and growth of a personal design philosophy.

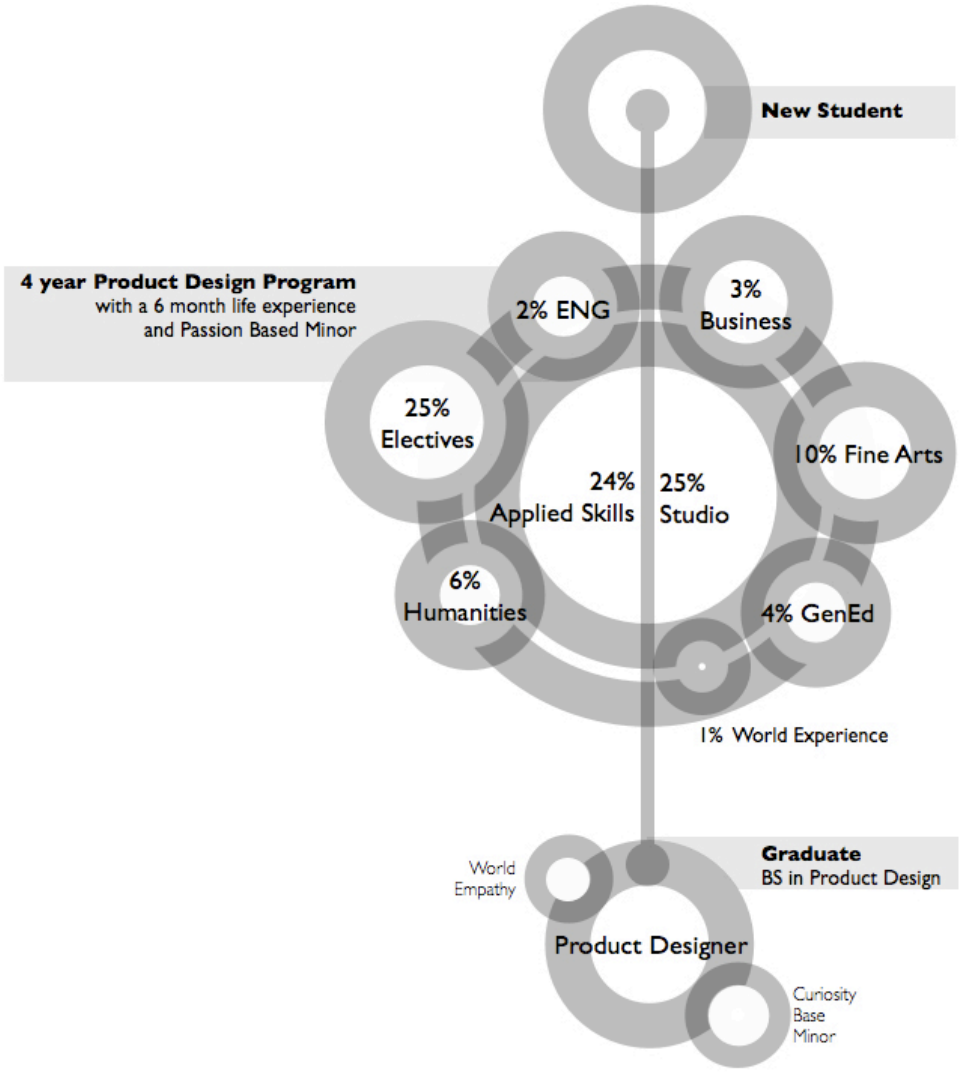

Figure 8

Diagram shows the percentages learning opportunities and how they are used to form an adaptable product designer with a worldview and passion based minor

Studio courses: Involves the application of the Product Design lens. Studio culture is fostered in a mixed-use and mixed-level open environment that emphasizes all forms of making, authorship, decision-making and social appropriateness. Intellect, design thinking and empowerment will be activated through critique.

Conclusion

How do you know when you're done?

This answer is easy: you don't! In summary, what is laid out here is a synopsis of the questions that drove the development of a new product design program and some insight into how they were answered. As can be expected it barely scratches the surface of the

depth of the work, insight and decision making that went into the program's development. It tries to create for you a personal journey of discovery and intellectual drivers that come from years of experiencing and creating design. It should be considered and judged as an eight-year experiment that will change dynamically over the course of the next several years.

The takeaway the author wishes for the reader is that this paper be cause for designers, educators and critics to debate and reflect on the importance and necessity of design education around the globe. For design, this happens in the world, and not the classroom. Designers need to reclaim the value of design from industry and begin reflecting the needs of society. They should create solutions not necessarily with objects but through the face-to-face and culture-to-culture sharing of design thinking in an effort to produce a new design value.