Training, Education, and Learning Sciences, Vol. 155, 2024, 63–71
https://doi.org/10.54941/ahfe1005391

Beyond the Classroom: A Case Study of Higher Education Internship Support for Industrial Design Students

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ABSTRACT

This paper presents a case study that investigates the organizational structure and support mechanisms for preparation and obtaining internships provided by industrial design programs at three comprehensive universities in the United States of America: the University of Kansas, University of Kentucky, and Western Michigan University. Internships serve as a pivotal component in preparing students for the professional landscape, offering a practical bridge between academic knowledge and real-world application. However, the strategies and institutional support contributing to high participation rates in quality internships remain inadequately understood. The variables under scrutiny include the impact of institutional support structures, the maturity of the industrial design program, access to alumni in the field, prioritization of internships in the program, and level of faculty engagement.

Keywords: Industrial design education, Internship programs, Educational opportunities, Education and industry

INTRODUCTION

Internships play a pivotal role in preparing students for full-time employment in the field of Industrial Design, providing valuable experiences that enhance their professional readiness. Extensive research indicates that internships effectively equip students with the necessary skills, insights, and understanding of industry expectations that may be challenging to acquire solely within an academic setting. (Binder, Bagueley, Crook, and Miller, 2014) One of the distinctive features of internships is the unique level of mentorship they can offer, a facet often lacking in regular employment opportunities. The typically structured nature of internships ensures that participants receive guidance and support in honing their skillsets, fostering an environment conducive to professional growth. As a result, internships both instil confidence in students navigating their educational journey and significantly contribute to their employability upon graduation (Maertz et al., 2014).

INSTITUTIONAL STRUCTURE AND GUIDELINES FOR INTERNSHIPS

There has been little to no published data on the impact of internship programs in Industrial Design. This case study examines three four-year

comprehensive universities' approach to internships, specifically the organizational structure and support mechanisms of industrial design and how they impact internship placement. The Universities involved in our study include the University of Kansas (KU), The University of Kentucky (UK), and Western Michigan University (WMU). The relative size of each program is similar, however, the programs vary in when they were established, internal support for preparation to apply for and obtain internships, if students are required to have an internship to graduate, and option to obtain academic credits for internships.

The University of Kansas, Industrial Design Program

The University of Kansas (KU) Industrial Design Program, established in 1941, is a four-year program with approximately 70 undergraduate students. While graduation does not mandate an internship, KU requires three three-credit professional practice courses, ADS 378: Problems in Industrial Design. Students can register for these courses during an internship placement to get academic credit during their internship experience. KU's curriculum also includes a mandatory INDD 430: Portfolio course in the third year.

KU allows students to apply for 3 credits of ADS 378 for full-time internships, including in the summer or school year, if it meets the specified criteria. Most KU students participate in internships during the summer; however, students may also engage in up to two semesters of off-site full-time internships during the fall or spring semester and still graduate on time. Each semester, up to 3 credits can count towards INDD 378 credits, 3 towards core studio requirements, with online courses filling the remaining credit requirements. While uncommon, some graduates partake in twosemester internships, with an average of one student per graduating class opting for this extendedexperience.

In order to make this possible, the University of Kansas has clear criteria for obtaining credit for internships: "Experience in industrial design practice gained while working in an internship position within a professional industrial design firm (consulting office or corporate design department). Experience must be gained while working under the guidance of a cooperating, qualified design professional. Details of each internship, e.g., name and location of firm, identity of cooperating professional, length of internship, hours worked each week, nature of work experience, methods to be used in evaluating student performance, etc., must be satisfactorily defined, arranged, and agreed upon jointly by the student, the firm offering the internship, the instructor under which the course is listed, and the industrial design area head prior to the student's enrolment in the course."

Western Michigan University, Product Design Program

The Richmond Institute for Design and Innovation (RIDI) at Western Michigan University (WMU), established in response to local industry demand, offers a relatively new four-year Product Design program. The program, which had its first graduating class in 2021, maintains an average enrolment of 100 students. WMU mandates a professional internship and an online

course (RIDI 4640 Design Internship) for graduation, omitting a dedicated portfolio development course.

WMU students typically complete internships during the summer after their junior year, concurrently registering for the three-credit asynchronous, online RIDI 4640 Design Internship. The program does not facilitate internships during fall or spring. There is no dedicated opportunity to earn academic credit for a second internship. The criteria for industrial design internship credit is only what is on the course description. WMU RIDI 4640 Design Internship course description: Design internship provides students with work experience and exposure to professional practice through an internship in a professional setting. The Internship can be taken in the summer between the second and third and/or the third and fourth years of the Product Design program.

University of Kentucky, Product Design Department

The University of Kentucky (UK) Product Design Department is set to graduate its first class in spring 2024. This is a burgeoning department with an anticipated average enrolment of 60 students. UK does not require internship participation to graduate from the program nor do they provide course credit for internship participation. Currently, students are not formally supported in participating in internships during the Fall or Spring semester if it means not being able to attend on-site courses.

To aid in employment readiness, UK offers two Portfolio courses: PRD 261: Design Visualization: Photo/Portfolio and PRD 450: Portfolio for Product Design. As this program has not graduated any product designers there is the unique challenge of not yet having alumni available as a resource for current students. Alumni are often instrumental in securing internship placements and provide outside mentorship for students. Faculty in new programs often have limited time to assist students outside of class due to the effort and time it takes to build a new program.

QUANTITATIVE MEASURES

This study employed quantitative methods for data collection and analysis. A survey was administered at KU, UK, and WMU, and included current 2nd, 3rd year, 4th year, and graduated students from the prior year.

University

Participants were asked to identify their university. The options included: Western Michigan University (WMU), University of Kansas (KU) and University of Kentucky (UK).

Internship Participation

Participants were asked if they had participated in an internship program since beginning their ID program (responses were Yes or No).

Number of Internships

Participants were asked "How many internships/ apprenticeships have you participated in?" with a range of 0–4 provided.

How Landed Internship

Among participants with internships, participants were asked "How did you land your internship? Please select all that apply" with the following options: 1) you responded to a job/internship posting, 2) you met someone at the company through networking, someone outside your university to the company, if so, who? and 3) someone inside your university referred you to the company, if so, who? And Other (open response). For analytic purposes, we recorded these variables to include two categories: 1) applied via a posting only (participants who only selected "responded to a job/internship posting") and 2) applied with any personal connections. Importantly, or our analyses, we focus only on how participants landed their first internship (if they reported more than one internship).

Perceived Impact of Internships

Participants who had participated in at least 1 internship were asked: "How would you rank the impact of all your internships on each of the following? (With 0 showing no impact, and 5 showing maximum impact)" with the following domains: 1) career/professional learning, 2) benefit to your future, and 3) benefit to your industrial design education. Our analyses use each individual scale as well as a summed version of the three scales to determine overall impact, where higher scores indicate greater perceived impact.

Application to Internships

Participants without internship experiences were asked: "Did you apply to any internships?" with the options: "Yes" and "No."

Sample Size & Missing Data

In total, 117 individuals began the survey. Of these participants, 116 provided responses to which university they attended, 111 provided responses to the question about participating in any internships and the number of internships they have had. Of the 35 participants that reported having an internship, 30 provided information on how they landed their internship and the perceived impact of their internship experiences. Among participants without any internships ($n = 76$), all provided information about whether they had applied to any internships.

Analytic Plan

The focus of this paper is on how mentorship programs impact internship placement rates. To investigate this topic, we used cross-tabulations and bivariate ordinary least squares (OLS), negative binomial and logistic regression. Coefficients for the negative binominal and logistic regression

analyses are exponentiated to ease interpretation. Due to small samples sizes, multivariable analyses were not conducted.

RESULTS

University Affiliation

In total, 32.8% of the sample attended WMU, 43.1% attended KU, and 24.1% attended UK (Table 1).

Internship Participation and University

Bivariate logistic regression analyses showed that participants at WMU were 5.43 times as likely to have any internship experiences compared with UK participants (SE = 3.468, $p<0.01$). However, there was no statistical difference between likelihood of having any internship between UK and KU (OR 2.30, SE = 1.443, $p>0.05$) (Table 2).

Number of Internships and University

Negative binomial regression analyses showed that compared to students at UK, WMU students had significantly higher odds of having an internship (IRR = 5.014, SE = 2.695, $p<0.01$) and KU students had marginally significantly higher odds than UK students (IRR = 3.168, SE = 1.866, $p<0.10$) (Table 2).

How Landed Internship

Importantly, there were no students at KU who landed their internship via ad only. As a result, KU was excluded from the regression analysis. The results showed no significant difference in the odds of landing an internship via an ad only versus landing it via personal connection for WMU and UK students. However, the odds-ratio was large (OR = 2.100, SE = 1.654, $p>0.05$), which suggests that this non-significant result may be due to a lack of statistical power (Table 2).

Perceived Impact of Internships and University

In the overall scale, there was no difference in perceived impact of internship experiences by school among those who participated in an internship (Table 2). However, participants at KU reported significantly higher scores on the education impact subscale relative to the students at UK (B = 1.794, SE = 0.851, $p<0.05$).

Application to Internships among Participants Without Internship Experience and University

Among students who did not have an internship, there were no significant differences in the likelihood of applying to an internship by university (Table 2).

Table 1. Survey participation by school.

	N	Percentage
Western Michigan University (WMU)	38	32.76
University of Kansas (KU)	50	43.10
University of Kentucky (UK)	28	24.14
Total	116	100.00

Table 2. Bivariate regression analyses.

	Sample: All Respondents		Population: Participants With Any Internships					Sample: Participants Without Internships
	Any Internship[a]	*Number of Internships*[b]	*How Did You Land Your Internship*[a]	*Impact Scale*[c]	*Impact Scale – Career*[c]	*Impact Scale – Future*[c]	*Impact Scale – Education*[c]	*Apply for Internship*[a]
University (Reference = University of Kentucky)								
Western Michigan University (WMU)	5.431**	5.014**	2.100	0.976	0.0238	-0.238	1.190	0.545
	(3.468)	(2.964)	(1.654)	(1.662)	(0.500)	(0.563)	(0.845)	(0.355)
University of Kansas (KU)	2.300	3.168+	1	2.103	0.359	-0.0513	1.795*	0.818
	(1.443)	(1.866)	(.)	(1.673)	(0.503)	(0.567)	(0.851)	(0.441)
Constant	0.174**	0.148***	0.857	11.67***	4.333***	4.667***	2.667**	0.917
	(0.0942)	(0.0790)	(0.477)	(1.508)	(0.453)	(0.511)	(0.767)	(0.383)
Log Dispersion Parameter		0.929						
		(0.553)						
Observations	111	111	27	30	30	30	30	76

Standard errors in parentheses; Exponentiated Coefficients where Indicated
+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001
Notes:
a. Logistic regression model; coefficients exponentiated
b. Negative binomial regression model; coefficients exponentiated
c. OLS regression; coefficients not exponentiated

INTERVIEWS

To further understand the experiences of our students, informal, semi-structured interviews (n = 12) were conducted with 4 students from each participating program, including equal numbers of 3rd and 4th year students interviewed. These qualitative interviews were conducted to understand the support provided by their program in finding and obtaining internships as well as support provided during the internshipandthe students' perceived importance of internships.

Questions That Were Asked

Questions for Students Who Participated in an Internship(s)

- Where was your internship?
- What were your primary responsibilities during your internship?
- How did you get your internship?
- How did your school support you when you were applying?
- Did you have support from your university during your internship interviews? (What sort of support?)

- Did you have support from your university during your internship? (What sort of support?)
- Were you able to get academic credit for your internship, how was that process?
- What additional support would have been helpful that you didn't have?
- Have your internship(s) changed your approach to your education?
- For Seniors: How prepared do you feel to graduate?
- For Juniors: How prepared do you feel for your senior year?

Questions for Students Who Did Not Participate in an Internship(s)

- Did you apply to any internships? How many?
- How important is it to you to have an internship?
- Why do you think you have not had an internship?
- Can you think of any ways your school or program could better support you in securing an internship?
- For Seniors: How prepared do you feel to graduate?
- For Juniors: How prepared do you feel for your senior year?

Findings From Interviews (n = 12)

Instructor Impact

- Instructor turnover was an issue for WMU and UK, the disruption caused inconsistency in faculty stressing the importance of internships, and how much support is provided in preparing for internships.
- Instructors offering different viewpoints in what is viable for industrial design portfolios and projects causes stress and confusion for students, making them feel insecure.
- Instructors who consistently talk about the importance of finding an internship and help students put together their portfolios and resumes early and often have a high impact on students applying for internships.
- Instructors' connection to the field and opportunities directly impacts student's placement in internships. Internships are intensely competitive and having instructors connect and recommend students for positions is effective.

Students' Expectations

- Students expect their departments to help prepare them for internships and employment, if the department attempts to outsource that preparation (for example, to the career center) the students feel unsupported and frustrated.
- Students' who were sent to the University Career Services Center when they asked for help preparing for internships and employment were frustrated by the lack of knowledge and understanding of the ID field.
- The School Career Fair was suggested for students from one program to find internships or employment, when there were no ID specific opportunities present the students felt "abandoned and helpless."
- Students at WMU and KU felt that finding an internship was their responsibility, while students at UK felt that their institution had not done enough to support them finding an internship.

Internship Experience

- Students were sometimes unclear as to what counted as an internship experience, some internships were not industrial design related and some students had jobs that they applied to which served more as an internship than just employment.
- Students perceived internships as having a mentorship aspect and helping them grow as a designer.
- None of the programs had a protocol for checking in on students during their internships.

Preparation and Obtaining Internships

- Students need significant individual support putting together their portfolios outside of a portfolio class.
- Mentors were a trusted and consistent resource in portfolio preparation and preparing students for interviews.
- Many students interviewed from all three programs had a connection for their internships, either through family, mentors, or faculty.

Confidence Through Internship Experience

- Having internships improved students' confidence in the classroom and in their preparedness after graduation or for their Senior year.
- The mentors assigned during students' internships made the students feel more confident, helped grow the students' skillsets, helped navigate a professional work environment, and often continued to be their mentor after the internship ended.
- Students who did not participate in an internship felt less prepared for the next year of school or graduation.

CONCLUSION

In conclusion, internships play a crucial role in preparing industrial design students for the workforce. The study reveals varying effectiveness in internship preparation strategies across the three programs analysed. Notably, a significant proportion of 4th-year students had engaged in internships, whereas a majority of 2nd-year students expressed a lack of preparedness, emphasizing the need for portfolio development which resulted in opting out of the application process.

Successful strategies encompassed consistent emphasis on internship importance from the 1st year, integrating portfolio discussions and development into studio projects from 1st to 4th year. Program-wide consistency among faculty regarding portfolio expectations and internship application guidance is recommended, but none of the programs studied had achieved this. Conversely, programs neglecting internship discussions risked students not recognizing their significance.

Notably, programs reliant on one or two faculty members overseeing internships faced challenges, especially with faculty turnover. This research underscores the necessity of clear internship guidelines, enabling students to pursue opportunities that optimize their educational and professional

growth. Clear communication, early and ongoing application encouragement, and portfolio integration emerged as key elements in ensuring successful internship experiences for industrial design students.

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