
WHERE ARE WE NOW?

Elevating Design Practice
through Design Research



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During the 47th annual [Environmental Design Research Association](#) (EDRA) conference (EDRA47), held in Raleigh, May 2016, the authors presented a Professional Development Tutorial session titled “Solutions for Design Research in Practice: A Roadmap for Overcoming Information Hurdles.” Attendees and presenters alike felt the information shared about challenges and solutions could promote the successful incorporation of design research into design delivery.

By sharing the information presented at EDRA47, engaging in dialogue, and gauging our successes (as well as our failures), we can overcome the hurdles that we all face when applying design research to practice. This paper identifies opportunities for design research that can improve the viability of current and future design practices, and helps identify where to shepherd the growth of design research so that it elevates the value and profitability of design practice.

We hope this paper is the first of many steps in an industry-wide effort to elevate the design industry through the application of design research in practice. We gladly welcome your feedback and questions. Please reach out to us to continue the conversation.

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ABOUT THE STUDY

PURPOSE

In May of 2016, we engaged in a conversation at EDRA47 about the information hurdles that today's designers and design researchers in practice are facing. To move toward solutions, we first needed to better understand the challenges related to conducting and implementing design research in practice. We wanted to know if there were universal hurdles, and if so, what solutions worked for jumping these hurdles.

A man and a woman are in an office setting, looking at a tablet together. The man, on the left, is wearing a dark sweater over a white collared shirt and is smiling. The woman, on the right, has short grey hair and is wearing a dark blazer over a white shirt with a colorful patterned scarf. They are both looking at a tablet held by the man. In the background, there are shelves filled with colorful folders or binders. In the foreground, there is a desk with some papers and a small green plant.

“MANY
RESPONDENTS
WEAR MULTIPLE
HATS.”

METHODOLOGY

To understand the challenges and solutions design researchers in practice were experiencing, we developed a 29-question online survey, which included six multiple-choice questions, three Likert scale questions, and 20 open-ended questions.

The survey questions focused on such topics as:

- Respondent type: role, title, sector, and credentials
- Defining, integrating, and nurturing one's role
- The value and credibility of design research
- Sustainability of design research in practice
- Methods
- Resources: staffing and technology
- Knowledge sharing

The online survey was open for three weeks in March 2016, with the link shared in two concurrent bi-weekly e-newsletters, published by EDRA. Direct-asks were also extended through the authors' personal networks, such that we asked our colleagues to both take the survey and to share the survey link with their respective networks (a snowball, or chain, sampling technique).

PARTICIPANTS

In total, we received a sample of 36 participants, including:

- 5 students
- 8 educators
- 8 designers
- 15 design researchers in practice

Based on open-ended responses, we found that many respondents wear multiple hats, e.g. an educator who was also in practice. Likewise, many did not have one area of specialization or practice area; most were conducting research in multiple sectors and on varied project types.

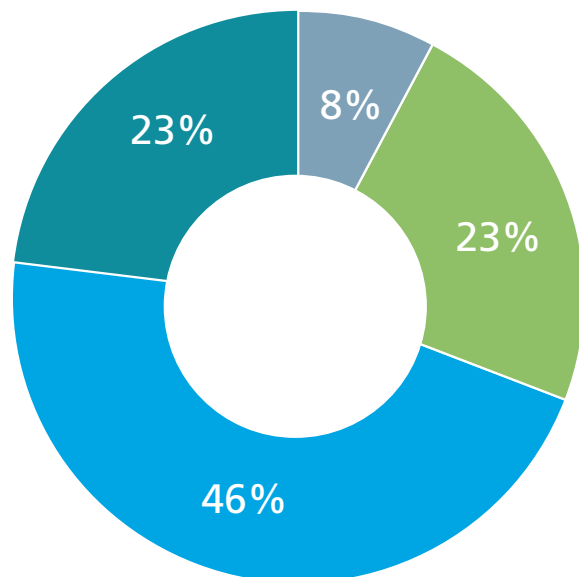
“ SINCE I’VE BEEN HIRED,
MY ROLE HAS EVOLVED AS
MY FIRM DECIDES WHAT IT
COULD OR SHOULD BE.”

Design Researcher

**As a researcher in practice, do you
have a defined job description?**

- Yes - defined by human resources
- Yes - self-defined,
but formally instituted / incorporated
- Yes - self-defined, but it's informal
- No

13 out of 15 design researcher
survey participants



FINDINGS

The focus of the first set of analyses was on the responses of the design researchers in practice. Analyses consisted of descriptive statistics and content analysis involving agreement and saturation of findings. We found four (interrelated) thematic challenges from the content analysis:

- Defining one's role
- Showing value
- Availability of resources (funding and staffing)
- Methods

DEFINING ONE'S ROLE

One of the first things we identified design researchers in practice struggling with is a challenging and deceptively simple hurdle—defining one's role. Participants not only reported variations in their roles and responsibilities, but there were even differences in the titles people held. Likewise, who defined these titles and roles was mixed. Twenty-seven percent of respondents had a job description defined by their employer, whereas 64% were self-defined. Of those self-defined, 36% were self-defined with their employer formally instituting/incorporating it, and 27% were self-defined but only had an informal definition/understanding of their role. In addition, 9% of the design researchers reported they didn't have a defined job description.

Regarding one's responsibilities, survey responses were wide-ranging, with design researchers conducting nearly as much billable research as non-billable research—an average of 35% versus 33% of the respondents' time, respectively. External marketing and knowledge-sharing remains a priority (at an average of 30% of the design researchers' time), but many are also involved in internal marketing and knowledge-sharing efforts (at an average of 34%). In other words, one third of design researchers' time is spent explaining to others within their own organization what they do and why.

Common challenges to defining one's role:

- Standardized job descriptions and titles
- Explaining role and responsibilities
- Establishing one's expertise and credibility

A man and a woman are looking at a chalkboard. The man, wearing glasses and a white shirt, is pointing at the board. The woman, wearing a yellow and green patterned shirt, is looking at the board. The chalkboard has some faint drawings on it. The background shows a wall with architectural drawings.

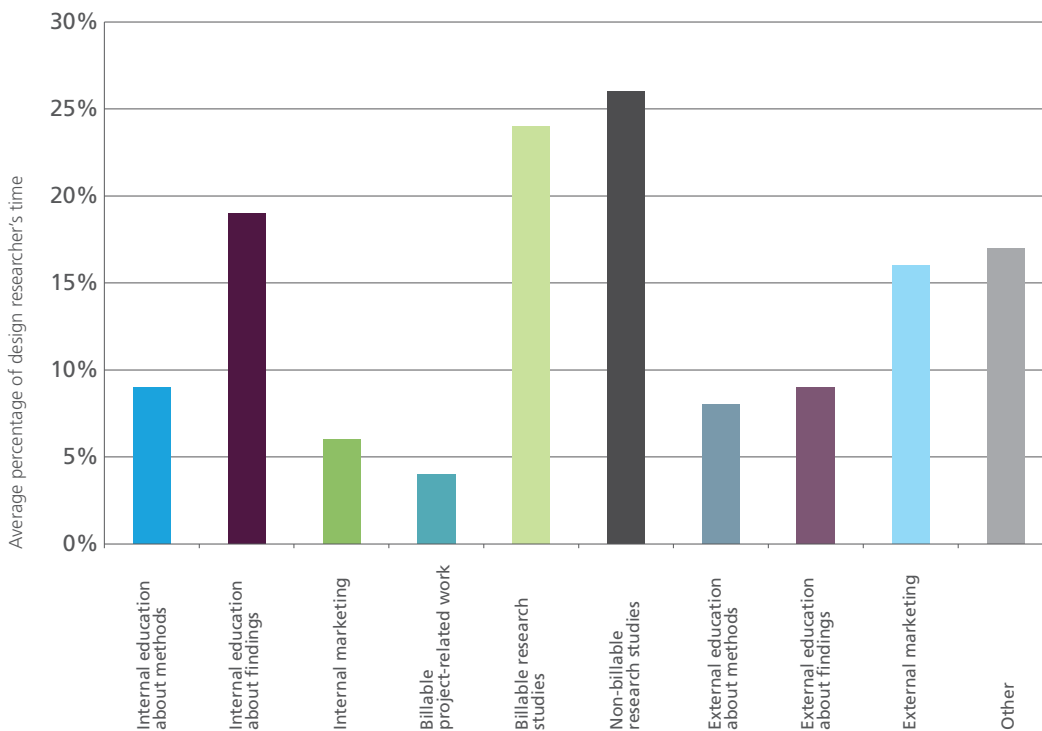
“DEFINING MY ROLE
HAS ALSO MEANT
DEFINING MY VALUE.”

Design Researcher

Along these lines, most of the participants reported difficulty explaining the distinctiveness of their role and their responsibilities. Researchers also commented on their need to differentiate their role from what the Market Research/Business Development departments do. In addition, researchers described how sometimes their design colleagues felt that they, too, have a research knowledge base and skill set. Yet two things would often unfold: either these designers did not have the time to perform the research by themselves, or the perceived skill sets were actually not as strong as previously described.

Researchers participating in the survey had difficulty substantiating their work's credibility beyond peer-reviewed publishing, which often is not as relevant to practice-based design researchers because it is a mainstay for credibility and achievement in academia. Thus, many researchers in practice are looking for external validation from other sources, such as pursuing [Evidence-Based Design Accreditation and Certification \(EDAC\)](#) from the Center for Health Design. Several of the researchers noted they are also looking toward a newly established project certification program, EDRA's [Certificate of Research Excellence \(CORE\)](#), to receive third-party validation of rigorous and impactful practice-based design research.

Establishing trust/buy-in with design project team members and clients was crucial to one's success and credibility. Many of the participating design researchers recounted memorable instances where a design team



What are your research-related responsibilities?

12 out of 15 design researcher survey participants

member understood the value of research after repeated attempts at clarification. Some respondents said they found greater success when they had a “champion” pave the way. A champion can be a team member who is high up in the organization, understands research, alleviates others’ concerns, and educates the client and/or other team members about the value and process of practice-based design research. However, many design researchers still struggle with being part of the team, whether that means getting brought in at the right time during the design process, or something deeper, like getting colleagues to understand and embrace the value of research in practice.

In order to effectively communicate one’s role to others, participating researchers successfully deployed several strategies, many of which involved rethinking methods of design delivery. Researchers noted the importance of following their organization’s marketing efforts and getting in at the start of a design project. That way, when project budgets required downsizing, some element of the proposed research had a better chance of survival and influencing foundational design decisions. Additionally, standardization and automation of research techniques across design projects made it easier and more cost effective to integrate research into design delivery. Taking a step further, research techniques that enhanced or revised existing design delivery without increasing costs or schedule were effective. For example, typical walkthroughs and focus groups could be supplemented by behavioral observations and surveys.

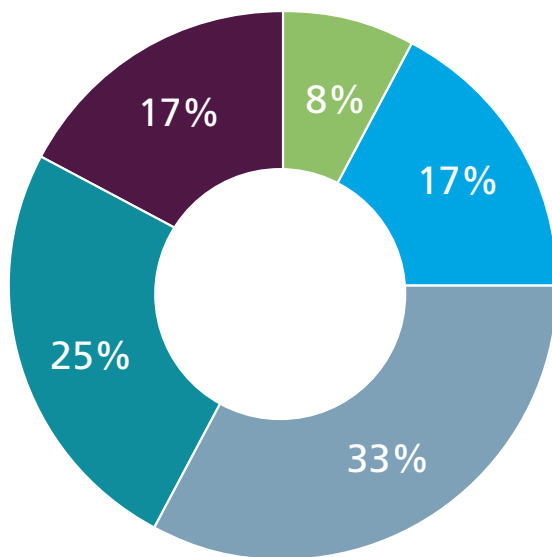


Grit, perseverance, and patience are essential. Colleagues often want “proof” of the effectiveness or value of research before granting research a greater presence on design projects. The study’s participants noted the importance of repeated attempts—and failures—before there was a success that proved the value of research to others. Even when successful, researchers had to repeat and enhance their successes through continued iteration.

Growth of one’s role and responsibilities tended to be incremental, organic, and opportunistic as opposed to dramatic and structured. Educating colleagues about “Research 101” was instrumental in dispelling false assumptions about role, cost of research, and research rigor. Given the newness of research within design practice and the necessity for it to fit into the culture and vision of unique organizations, many research participants in this survey reported that keeping their role organic and flexible was essential. Other participants pointed out, however, that hierarchy and title held sway. If a researcher was a Vice President or Principal, or somehow closely aligned with the head of an organization, it seemed he or she felt there was less resistance to conducting and implementing research in practice, and consequently greater success.

SHOWING VALUE

Another challenge researchers in practice are facing is that design research is seen by some as a service that sits outside the traditional scope of design services, rather than integral to it. Therefore, they deem it an “additional service,” which may not be worth the added cost/effort to conduct. Many survey participants reported struggling with getting research integrated into design projects—from buy-in to timing, budget, and process. In fact, only 30% of respondents said they have had a positive experience trying to incorporate research into their organization’s standard design process. Building research into a design project from the start, and really homing in on what needs to be evaluated, seem to be essential components to successful integration.



Within your organization, incorporating research into the standard design process has been ...?

- Very Easy
- Easy
- Neutral
- Difficult
- Very Difficult

12 out of 15 design researcher survey participants

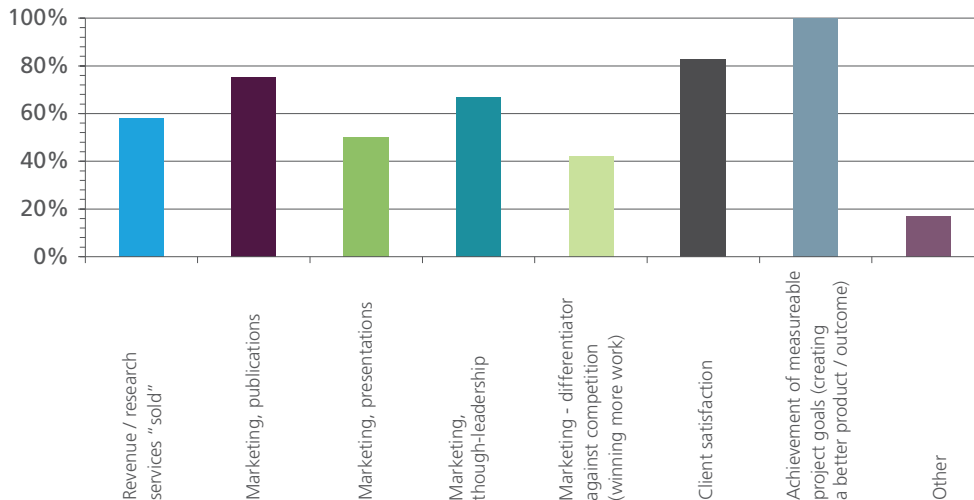
“The [design] teams feel so overwhelmed with existing project demands that doing research seems like an add-on, a burden – not something integral to their process, or that can actually alleviate project stressors.”

Design Researcher

Common challenges in showing value:

- Getting research incorporated into design projects
- Marketing/differentiation
- How to show the importance of “softer” metrics [quantitative vs. qualitative]





How does your organization measure the value of research?

Though sometimes difficult to integrate into a project or an organization's design process, conducting and applying design research in practice is steadily growing in popularity throughout the design industry, with more and more clients asking for—and even expecting—design research services. Accordingly, being able to offer design research services *is* a market differentiator, which design firms can leverage while pursuing project opportunities. However, developing a successful marketing approach that highlights the value of design research and validates the costs of services (or folds research services directly into the design costs) is key.

In general, though, the entire industry—from marketing departments and principals “selling” work to the design researchers conducting the studies—needs to find more effective ways to show the value of incorporating research into practice. This goes for showing the value of both “hard” outcomes (e.g., cost savings or measurably improved productivity) as well as “soft” outcomes, like building occupants’ improved quality of life or satisfaction levels. However, it can be very difficult to parse out actual savings as a result of a design element, or to quantify softer metrics derived from qualitative research methodologies. Thus, the industry as a whole needs to become more creative and convincing in how we prove to clients the positive outcomes (i.e., value) that can result from conducting and applying design research in practice.

“Getting people to accept the ‘softer’ metrics of [Environment & Behavior] research has been difficult. They tend to focus on building performance, LEED performance, and other hard metrics.”

Design Researcher

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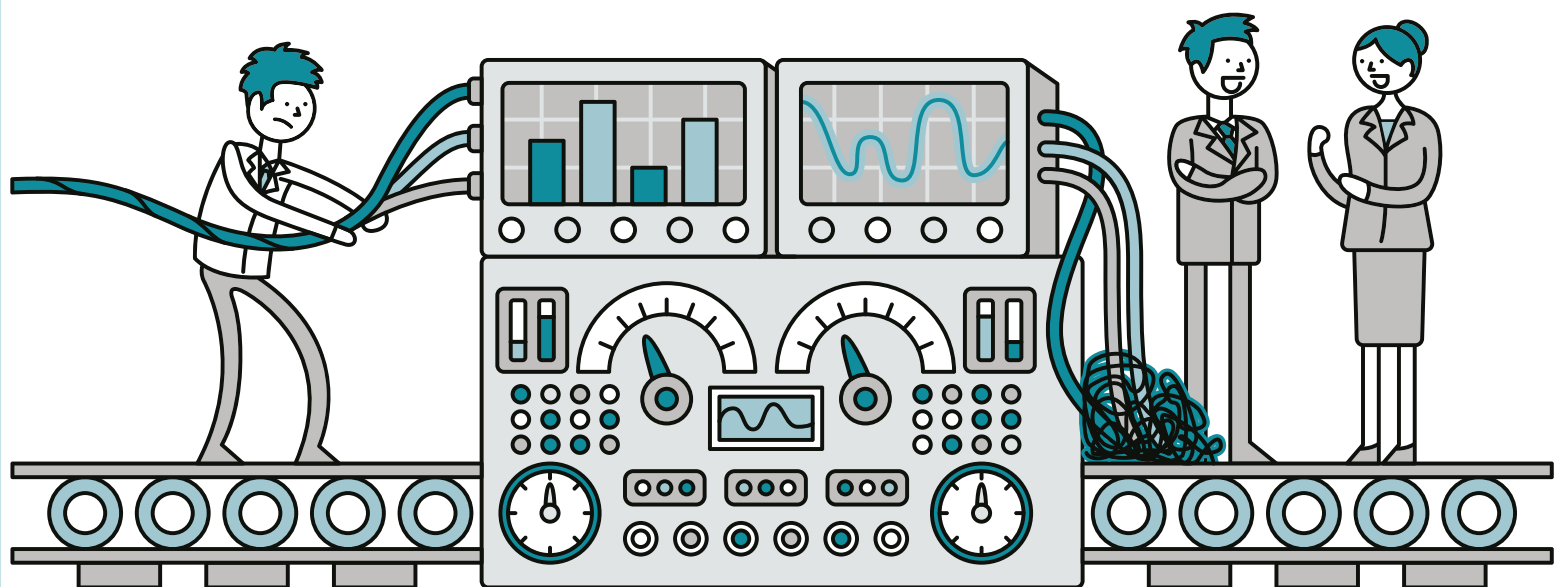
...WE FREQUENTLY FEEL AS THOUGH
WE ARE PUSHING ROPE. I NEED
SOMEONE TO PULL THE OTHER END.

”

Design Researcher

Ultimately, it needs to be a two-way street. The design industry must get to a point where there are clients and project teams *wanting* research findings, not just researchers willing and able to *provide* research findings. As one survey respondent explained, “We need the research users to do more pulling. [My fellow researchers] say that we frequently feel as though we are pushing rope. I need someone to pull the other end.”

To create and encourage that “pull,” the participating researchers had a few solutions. Besides the marketing value of design research, researchers felt that the cost savings to downstream design delivery efforts and a building’s life cycle were compelling. Carefully maintained databases had the added bonus of informing design decisions within a fast turnaround, thereby speeding up design decision making and consensus. But, breath should not be wasted on every opportunity. In the contemporary, client-driven design profession, it was surprising to learn that research participants reported successes when they tended to be selective of their clients. Clients who valued design research were generally from progressive organizations and near or at the top. That said, the clients were not perfect. They were real people with real problems that needed real solutions – many times. That’s a tall order for academically-trained design researchers trained to perform basic (versus applied) research.





Common challenges with the availability of resources:

- Having enough billable work to fund a research team
- Determining whether to set a fee structure like a consultant or designer
- The disconnect between students' interest in practice-based research and the opportunities available for training in the field
- Finding quality research team members

AVAILABILITY OF RESOURCES: FUNDING AND STAFFING

Staffing and funding issues go hand-in-hand in many cases, as one would expect. For instance, having enough billable work to support a design research team can be difficult. There may actually be a lot of interest in design research services and plentiful research projects. However, without outside funding, the design researcher/team may be faced with limitations in staffing, since additional salaries cannot be justified. As one survey participant from a large design firm noted, "We don't have clients paying for our studies, so a huge portion of my time goes to overhead. There's no bottom-line justification for hiring more people—we aren't bringing in money to pay for them." Sourcing funding for any research project is always a difficult task, whether one is relying on client, grant, or overhead funding, or some combination of the three. However, when staffing is tied to that funding, it underscores the need for sufficient funding.

What one charges for design research services can also be an interesting challenge. Some of the surveyed design researchers charge and bill themselves as consultants, while others are setting lower fee structures similar to those

for traditional architectural services. Some of the respondents, however, feel that by using an architectural fee structure, design researchers are being undervalued and getting sub-par fees for their services since architectural fees are often priced low to be competitive.

When design research services are underbid, they can be difficult to properly conduct and many relevant questions can go unanswered. Likewise, when design research services are billed alongside architectural services, they are more likely to be “value engineered” out of the budget and project scope—thereby eliminating the design research opportunity altogether. The survey responses suggest that design researchers in practice need to know and stick to their value (i.e., not lower prices just to win a job), target understanding clients who place value on research and will pay for that value-add, articulate how their services differ from what the client may do in-house, and say no to opportunities that would bring in less fee than it would cost to run the study.

In regards to the team structure, we uncovered an interesting finding in the survey: Many students are eager but not able to get involved with research in practice. There seems to be a disconnect between the high number of design research students interested in going into practice and the minimal availability of academic courses and internship opportunities that would give these students the necessary training to get hired and experience real-world (i.e., non-academic) situations. The survey showed that 78% of the student participants were interested in a research career in practice, but two-thirds of the respondents’ academic programs did not offer courses that specifically target or train future practice-based researchers.

Existing academic programs tend to prioritize scientific rigor over hands-on, real-world training for design research in practice. A balance between the requirements of both training methods is needed. Changing the academic focus will be a challenge, as 89% of students reporting their academic institutions don’t support or develop internship opportunities specifically targeted to future practice-based researchers.

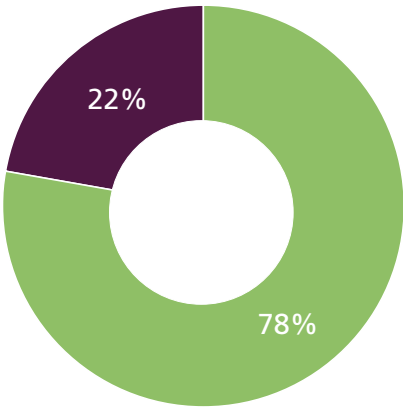
“ We are finding that clients are willing to pay for the research but not at a premium (when paired with design services). The challenge is that as an industry, architecture has been underselling itself to the point where the industry eats its young and new services (such as research). ”

Design Researcher

“MOST OF THE SCHOOLS FOCUS
ON THE FUNDAMENTALS OF
EXPERIMENTAL RESEARCH
INSTEAD OF THE MESSY
AND EQUALLY FASCINATING
WORLD OF FIELD RESEARCH.”

Design Researcher

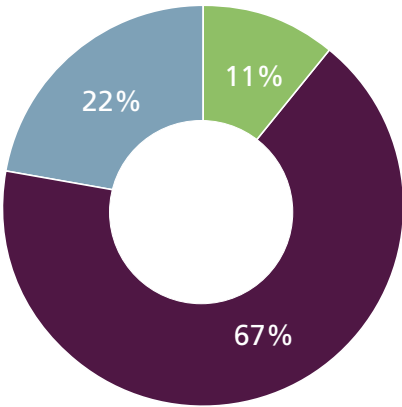
Not only are student interests not being represented, but the industry is seeing the results of this disparity. According to the survey, some organizations looking to hire design researchers are struggling to find qualified candidates. So even in this niche field, it can be difficult to find qualified candidates. Accordingly, design schools' academic and internship programs need to better support opportunities for learning and applying design research in practice. By getting exposure to practice-based design research methods, some students may find a new and exciting career path, while others may simply develop a better understanding of and appreciation for research in practice. Either way, this could have positive results for both the design industry and the people we design for.



In the last two years, have you considered a career as a practice-based researcher?

■ Yes
■ No

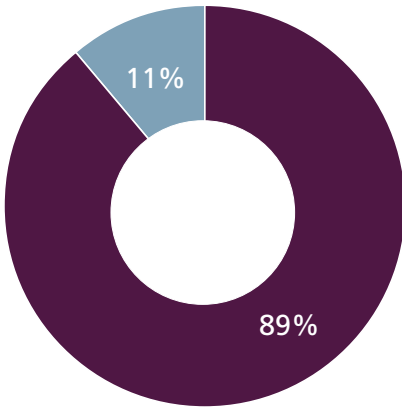
9 out of 13 students and educator survey participants



Does your academic institution offer courses that specifically target or train future practice-based researchers?

■ Yes, quite a few
■ Yes, but just a couple
■ Yes, just one
■ No
■ Not sure

9 out of 13 students and educator survey participants



Does your academic institution support or develop internship opportunities specifically targeted to future practice-based researchers?

■ Yes
■ No
■ Not sure

9 out of 13 students and educator survey participants

A woman with dark hair in a ponytail, wearing a teal turtleneck and a black cardigan, is shown in profile. She is holding a green marker in her right hand and looking towards the right. The background is blurred, showing other people in a meeting setting.

“ MY BIGGEST
CHALLENGE IS WHEN
STAKEHOLDERS ARE
UNCLEAR ABOUT THE
SUBSTANTIVE THINGS
THEY NEED TO KNOW.”

Design Researcher

METHODS

Corresponding to a research study's process, issues related to the methodology of practice-based design research can be categorized in three ways: (1) during the design of the study; (2) while the study is being conducted; and (3) after the study is complete. Survey participants reported varied challenges within each category. Survey participants reported varied challenges within each category.

In regards to the challenges faced while designing a study, the participants noted that defining or simply narrowing the scope of work can be difficult. In some cases, this difficulty arose because a wide range of topics or spaces were of interest so it was difficult to identify the specific research questions/hypotheses. In other cases, the design team and/or client was unclear on what needed to be researched. Frequently, it is up to the design researcher to guide the stakeholders through the decision-making process, or to define the focus of research outright.

Participants said that managing the clients' and/or design teams' expectations was also often a challenge. Again, it typically fell to the design researcher to clarify and define the scope of work, both in terms of the process and the product. An effective strategy that was shared for defining research questions was to set aside time in the project schedule for a diagnostic phase, during which high priority problems were sought and defined. One-on-one interviews and surveys were especially effective for targeting key problems with as little bias and the greatest objectivity possible.

Interestingly, one respondent also noted the difficulty in trying to explain what to most would be an obvious conclusion: that the outcomes of a study would likely have an impact on behaviors/operations, and possibly even the organization's bottom line. As the respondent described it, "Convincing people that user adaptation to [changes in] problematic environments can have a cost is often difficult."

In terms of the challenges being faced while conducting a design research study, respondents noted the difficulty they have working either in teams of one or in siloed teams. In both cases, cross-collaboration and exposure to new ideas and approaches can be limited. Finding the right methodology is also difficult for some, whether that be an approach to a problem or a tool itself. One respondent had an issue with finding a useful post-occupancy evaluation protocol that produced relevant findings, without having pre-occupancy data to compare them to. Another noted the difficulty in working for a government institution, where getting access to software

Common challenges for methods:

- Defining and narrowing scope of work
- Managing expectations
- Teams of one; siloed teams
- Finding the right tools, including the use of new technologies
- Working with different stakeholders
- Proprietary information
- Translating findings for use in the real world



“ People have to be able to imagine a change being beneficial—this is where storytelling is a strong approach, using examples and quotes from successful projects. People tune out data overload.”

Design Researcher

can be difficult and time consuming since foreign-developed software is not allowed. Yet another participant struggled with staying abreast of new technology and the availability of software to help conduct design research studies. Workarounds and crafting in-house tools not only were effective stop-gaps until a better solution could be reached, but also prompted innovation.

One participant also explained that we cannot discount the challenges researchers face when working with different stakeholders, whether it's a difference in opinion (i.e., what the research study should focus on), the importance of connecting to stakeholders at different levels of a hierarchal organization, or a matter of cultural or language barriers between the design researcher conducting the study and the study participants. There are many problems that can crop up, but also just as many ways that an experienced practice-based researcher can work through the issues and still come out of a difficult situation with thoughtful findings.

Lastly, with respect to issues that occur once the study is complete, a big challenge design researchers in practice face is translating research findings for real world applications. A key distinction between practice-based and academic research is this added step of explaining the key takeaways, lessons learned, and/or strategies that designers can employ in future designs. The goal of practice-based research is not to create a report that will sit on a shelf and collect dust; we want the findings to allow designers and clients to make more informed decisions, enabling them to design and build better buildings that have a positive impact on the occupants.

Accordingly, a key challenge for all researchers in practice is to communicate our studies' findings in such a way that (1) attracts the attention of designers and clients, and (2) conveys insights that can effectively impact the design industry. Along these lines, storytelling and narrative were conveyed as effective means to share knowledge. The authors agree with this strategy and, in fact, gave another presentation at a previous EDRA conference specifically on the topic of communicating research findings to designers.

“Doing research that pertains to users around the world can create issues related to cultural problems with self-reporting, language barriers, access to subjects, etc.”

Design Researcher



Ultimately, a successful design research project must identify the problem and clarify research question(s) from the outset, use the right methods and form the right team to conduct the study, be engaged with the designers, and share findings in an effective way. However, we must also *share*—share beyond the primary stakeholders and design team, even share beyond the walls of the organization. As this paper asserts, only through broad industry sharing, questioning our practices, and working together to find better solutions can we advance the practice and implementation of design research. Proprietary information has a place, but we encourage a continued conversation about design research in practice.

Whether it's establishing standard titles and job descriptions, or helping others understand the latest and greatest in technology as it applies to post-occupancy evaluation, there are ways that we can help each other while still maintaining any necessary proprietary boundaries and competitive market differentiators. We urge you to join us in improving design research in practice so that, as a whole, the design industry can be elevated. Please share this paper with a colleague who would have an interest in this topic, continue the conversation among your peers, and/or reach out to us directly to share your thoughts. After all, the first step toward improvement is understanding the challenges. We at Perkins Eastman and EwingCole are taking this step, and ask you to join us.

“A big challenge is confidentiality and the desire to hold on to information that has a high business value. My organization is [in the] public sector and our mission is to change practices to improve the built environment for people and the planet, so we need to share what we learn. But we work also with research teams and private sector organizations who understandably value intellectual property.”

Design Researcher

Emily Chmielewski, EDAC, Perkins Eastman
Nicholas Watkins, PhD, EwingCole

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