

Instructional Designers Leading Through Research

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As instructional designers helping subject matter experts design innovating learning experiences and leveraging educational technologies, they oftentimes find themselves conducting research to support the work they do. This research can take many forms, from reading research articles, investigating and testing educational tools, conducting research studies, participating in research communities, to serving in professional organizations. This chapter includes scenarios that illustrate how instructional designers can engage in research such as building a research network with professionals with different levels of research skills, creating partnerships with SMEs to conduct classroom-based research, and how to set up a research and evaluation agenda connected to professional development goals.

Introduction

The work of instructional designers (IDs) is complex in scope and depth. Research shows that this work involves traditional as well as non-traditional design tasks ranging from organizational tasks to design work to project management (Cox & Osguthorpe, 2003). Research has also pointed to the fact that IDs conduct academic research in learning design (Cox & Osguthorpe, 2003; Rowley et al., 2002). While IDs assist subject matter experts (SMEs) with the design of innovative learning experiences and the integration of educational technologies, IDs constantly explore creative and innovative learning design approaches. IDs “step into the unknown” (Yanchar & Hawkley, 2014, p. 280) to examine and adapt strategies, ideas, and tools that help face the challenges and complexities of the teaching and learning processes (Yanchar & Hawkley, 2014). In addition, IDs guide SMEs in creating learning plans, developing course materials, addressing accessibility needs, and using digital tools for optimal and effective instruction. The expertise, creativity, and experience of IDs is coupled with constant learning and experimenting that can be catalyzed with some form of scholarship of learning design. Thus, there is urgency to foster an endeavor for IDs to lead through research.

In research on course design, educational technologies and innovative instructional methods are at the center of IDs’ work. Yet, many IDs find it challenging to do research for reasons including time and resource limitations (Linder & Dello Stritto, 2017). Linder and Dello Stritto posit that IDs are critical in designing better learning experiences and supporting faculty in their teaching. As social and technological changes are shaping the educational landscape, IDs are in a position to develop new understanding of the impact on learning and teaching (Sims & Kozalka, 2008). In the case of COVID-19 and the rapid transition to remote teaching, IDs became “sherpas of online learning teams, experts in how to teach and design a course” (Decherner & Levander, 2020, para. 5) and have been

paramount and critical to supporting the abrupt transition. Looking further, the role of IDs is evolving offering new endeavors that can help transform the design of educational experiences and contribute to individual design projects as well as to the design fields as a whole (Yanchar & Hawley, 2014). Thus, these are reasonable aspects to foreground the practice of research for IDs and point to how existing views of scholarship often fails to recognize IDs' as knowledge contributors.

If IDs are already avid consumers of research, then promoting and supporting involvement in the scholarship of learning design would help look more closely and critically at the innovations that IDs create in more systematic ways to improve student learning and address educational changes. This chapter provides strategies and examples for IDs to become scholars in learning design in higher education.

The Competencies of an Instructional Designer

Leading through research requires to look at the connection between the competencies of IDs and the need for them to conduct research. The role of IDs is evolving requiring them to have a combination of multiple competencies. Overall, these competencies have been defined as the expected knowledge, skills, or attitudes that one must possess to effectively perform the job tasks (Richey, Fields, & Foxon, 2001). Research efforts have identified three specific and interrelated competencies: (1) knowledge, (2) skills, and (3) abilities (Martin & Ritzhaupt, 2014; Ritzhaupt et al., 2010), which have several implications for the work of IDs as researchers.

According to Ritzhaupt et al. (2010) the knowledge domain refers to “an organized body of information usually of a factual or procedural nature” (p. 427). In this domain, Martin & Ritzhaupt (2014) identified research-based competencies that include foundations of instructional design theories and models, learning theories, instructional design methodologies and processes. Additional research efforts indicated that IDs should have a working understanding of performance improvement interventions (Fox & Klein, 2003). Equipped with this body of knowledge, IDs go beyond the application of theoretical and conceptual principles to design learning experiences and to critically analyze the context in which design happens. IDs help make sense of learning theory and research to advance its practical applications.

At the skills domain, Ritzhaupt et al., 2010 consider skills as the “adept manual, verbal or mental manipulation of things” (p.427). In this domain, skills range from problem-solving to organization. Specifically, Martin & Ritzhaupt (2014) include collaboration and teamwork, problem-solving, decision-making, project management, uses of technology applications, and soft skills. Related research has identified additional skills such as cultural sensitivity (Fox & Klein, 2003) and analytical and conflict resolution (IBSTPI, 2012). This repertoire of skills that IDs need to develop, refine, and solidify overtime makes IDs ready for the challenge of an evolving educational landscape that requires change agents in learning design and technology.

The abilities domain refers to the “capacity to perform an observable activity” (Ritzhaupt et al., 2010). The research-based capacities that IDs need include creating effective instructional artifacts, working well within a team, working well with a variety of stakeholders, meeting deadlines (Ritzhaupt et al., 2010), and demonstrating empathy (Vann, 2017). Other abilities required relate to identifying and resolving legal and ethical dilemmas (Brigance, 2011). In addition, IDs are expected to lead not only educational technology and course development projects, but also the way into the future of learning innovation (Brigance, 2011; Fein & Watte, 2018; Shaw, 2012).

IDs already harness their creativity, navigate complex environments, take on challenges presented by ill-structured problems, and incorporate diversity of perspectives. As the competencies show, the ID field, as no other, interrelates multiple domains of knowledge, skills, and ability that can transform teaching and learning. This transformation can be enhanced by IDs' involvement in research which, at the same time, can expand the body of knowledge and insights in learning design and technology with perspectives from the field of practice.

Fostering a Research Endeavour for IDs

The work of IDs is multifaceted. IDs engage in the conventional dynamics of learning design and the application of theoretical principles which includes conducting needs analysis, finding research-based evidence, managing projects, building partnerships with SMEs, testing tools, investigating best practices, peer-reviewing course design projects, reviewing content and learning materials and investigating trends and emerging technologies. IDs also practice critical reflection for a retrospective examination of the design process to unveil challenges, assumptions, and taken-for-granted actions (Chatterjee et al., 2018). In addition, IDs oftentimes complete unconventional activities oriented towards administrative tasks. These activities range from preparing budgets and financial documentation to training SMEs and maintenance of web content (Schwier & Wilson, 2010). More recently, IDs' work and responsibilities are evolving to position IDs as leaders of digital transformation (Decherney & Levander, 2020). Many IDs' work intersects with other fields such as user-interface design (UX), learning sciences, data science, emerging technologies (e.g., virtual reality, artificial intelligence), and information assurance. Yet, the application of theoretical principles to the design process restricts the work of ID to a product-oriented emphasis (Gibbons, 2014). Gibbons underscores the importance of research to give us "the additional theory and data we need to make an effective application to individual cases that still respect the operational principles of the high-level theory" (p.76). Pivotal to this point, IDs can bridge theory and the product of its application as well as critically examine the intersection of the instructional design work with other disciplines.

If we consider roles and responsibilities along with competencies, IDs can make important contributions through a systematic process of empirical research to examine teaching in learning in a variety of contexts and modes. To do design work, IDs engage in a systematic design process similarly to what academic researchers do. Table 1 provides an example of some common ID tasks and their connections to research tasks.

Table 1.

Connecting ID tasks to research tasks

Example of ID tasks	Example of research tasks
<p>Conducting needs analysis: IDs collect data by conducting consultations with SMEs, surveying users or students, interviewing stakeholders, or performing document analyses of syllabi and curriculum plans.</p>	<p>Conducting a review of the literature to identify gaps.</p>
<p>Researching the literature: IDs immerse themselves in the literature to identify practices and evidence to support design decisions, apply theoretical insights, and generate innovative design ideas.</p>	<p>Surveying the literature to have solid foundation of the topic/gap for further empirical investigation</p>
<p>Managing projects and teams: IDs design workflows and documents to initiate, develop, monitor, and evaluate an instructional design project. IDs also plan tasks and set milestones to accomplish them.</p>	<p>Managing a research agenda with multiple projects and collaborators, and other responsibilities (e.g., service, teaching)</p>
<p>Showcasing projects: IDs share their work in local or global spaces such as teaching and learning events within their institutions, professional conferences, to inform the audience about trends and strategies in learning design and technology.</p>	<p>Presenting studies at conferences (e.g., posters, roundtables), research symposiums</p>
<p>Evaluating a tool: IDs often test the affordances of new tools and evaluate their use for effective learning. This work can involve surveying students, SMEs, and other stakeholders.</p>	<p>Conducting piloting studies for the implementation of educational technologies</p>
<p>Reviewing course projects: IDs often perform reviews of instructional design projects to ensure the quality of the project. Through this process IDs offer feedback to improve the project.</p>	<p>Peer review of journal manuscripts, conferences proposals, grant applications</p>
<p>Piloting design projects: IDs often perform pilot tests of course design and usability projects to determine the feasibility of a model or tool. This work can be an evaluation study for decision-making or effectiveness of the implementation.</p>	<p>Conducting pilot studies for establishing the research grounds</p>
<p>Communicating with stakeholders: IDs work closely with SMEs, multimedia experts, and program developers, which requires listening skills, higher levels of tolerance for ambiguity, attention to words and body language, empathy, and ability to receive and provide feedback. This communication is critical to building a relationship with the stakeholder and convey messages effectively in different formats (e.g., email, online meetings, face-to-face consultations).</p>	<p>Communicating with research team and other collaborators. Communicating research findings in varied formats (e.g., journal manuscripts, conference presentations, white papers, blogs) and to diverse audiences (e.g., students, scholars, funding agencies)</p>

Note. The connections provided in the table are broad and some tasks align more closely than others. This table is for illustrative purposes only to indicate that IDs conduct some form of research tasks to design learning experiences. Many learning designers are active academic researchers while others are intrigued by such an endeavor but have not had the support or the space to participate in research projects.

Best Practices for Leading through Research

This section provides best practices that facilitate the development and empowerment of IDs as active researchers by connecting their daily design experiences, reflections, and active curiosity to research practices.

At a Conceptual and Theoretical Level

Through the observations of the learning design work and its multiple outcomes (e.g., product, process, relationship with SMEs, outcomes for students, tools, media) IDs have a broader landscape for contributing to the field at theoretical and conceptual levels. Use of concrete experiences, survey of the literature, and critical reflective practice offer a foundation for mobilizing events that take place in the learning design process toward ideas that challenge the status quo of traditional practices. Practices that need deeper examination through a new lens. For example, IDs can prepare a response manuscript on a topic that holds traditional views (e.g., traditional research methods, assessment practices, large class sizes), a description of the current status of an ID competency (e.g., ethical considerations, accessibility of emerging technologies), a critical or analytical manuscript (e.g., the transforming role of experiential learning, proctoring exams), a white paper or best practice (e.g., creating effective slide presentations), or a revision of surveys and rubrics (e.g., faculty competencies to teach online).

At a Practical Level

At this level, IDs can engage in evaluation, design cases, and research studies. Some IDs already perform evaluation (Seeto & Herrington, 2006) as well research studies (Cox & Osguthorpe, 2003; Rowley et al., 2002) as part for their work as IDs. While evaluation and research use similar methodologies to gather data, these activities are distinct and contribute to the ID field in different ways. According to Fitzpatrick et al. (2011), evaluation and research share similar methodological approaches but differ in the purpose, use, generalizability of findings, and preparation. An evaluation study aims to make judgments and identify the worth of what is being evaluated. While an evaluation study may not necessarily qualify as a research study to contribute to build theory, it informs the decision-making process in a project at a local context. An evaluation study will employ methodological variation and different perspectives whereas a research study aims to contribute to knowledge and theory. Researchers are usually trained in a discipline, focus on similar or derived problems, and employ less methodological variation. In contrast, a design case refers to descriptive narratives of a learning artifact, environment, or experience that is expected to support learning.

As IDs engage in the process of exploration of design strategies and tools, it is possible to present research possibilities to SMEs to examine pedagogical or technical issues while the course is being designed and implemented. For IDs to engage in any form of research at a practical level, IDs can partner with SMEs who demonstrate an interest in scholarship of teaching, learning, and design. Some practices follow on how IDs can leverage opportunities for evaluation, research, or design cases.

Evaluation studies

IDs can create projects to evaluate the instructional design choices and their effectiveness on the learning experience. This can be done by connecting with SMEs that demonstrate interest in

improving not only the design of instruction but also their own teaching practices. An ID can invite the SME to consider the evaluation of a project in more systematic ways and help the SMS identify the purpose and intended use of the evaluation, develop a plan for accomplishable tasks for each member of the team, and create or survey the literature to find data collection instruments (e.g., surveys, interviews, usability testing protocols). In addition, the ID can search for scholarly venues where the evaluation project can be disseminated.

Research studies

IDs can focus on the Scholarship of Teaching and Learning (SoTL) which supports “our individual and professional roles, our practical responsibilities to our students and our institutions, and our social and political obligations to those that support and take responsibility for higher education” (Schulman, 2000, p. 6). IDs can participate in SoTL by collaborating with SMEs to conduct classroom-based and design-based research aimed to improve teaching practices and student learning. IDs can partner with SMEs that are interested in examining broader topics of mutual interest that connect to the design of learning experiences. Among these, an ID can collaborate on replicating an instructional intervention, applying a new design principle, examining in depth the dynamics of learning and teaching, applying innovative research methodologies, examining the intersection of learning design and other disciplines. Another approach for engaging in SoTL can include design-based research to develop interventions to solve education problems. IDs have the competencies for analysis, design, development, and implementation of educational practices. Certainly, conducting design-based research as a systematic and flexible methodology will allow IDs to improve those practices in specific settings within a collaborative and iterative process.

Design cases

As IDs, do we not produce a variety of learning design artifacts informed by research and best practices? IDs’ work has plenty of design cases that can showcase innovative designs, teaching and learning principles in action, alternative assessments, new models for inclusive design, development of digital tools, student support mechanisms, and teamwork with SMEs to name a few. Connect with SMEs to closely examine how the design was conceptualized, the problems and challenges the design intends to resolve, the stories behind its creation, the phases of the design and implementation, and the learning through its process and artifact. Once the focus is clear, begin outlining what is important to share about the design case and then move forward to telling the story of the learning artifact. Identify venues (e.g., conferences, practitioner journals, professional development) where the design case can be disseminated for other IDs, SMEs, and stakeholders. While a design case does not require a rigorous implementation of an empirical research study, it is a viable option to disseminate innovations in learning design and technology.

At a Reach-out Level

IDs can lead through research by engaging in service and professional activities that offer IDs other opportunities to explore the scholarship of teaching and learning.

Serving the Profession

IDs can volunteer to become reviewers or to serve as officers in professional organizations. Being a reviewer for conference proposals, peer-reviewed journals, or funding proposals, can be a very rewarding and enlightening experience for IDs to further a path to leading through research. For

example, by reviewing journal manuscripts or conference proposals, IDs can develop a critical perspective to observe the arguments, question the findings, analyze the methods used, deconstruct complex perspectives, and focus not only on the so what but on the then what of the arguments. As reviewers, IDs have the opportunity to learn the latest about current topics, gain inspiration for further research, and explore similar approaches from a different framework. Professional organizations and journals usually reach out to their communities for volunteers. This is an opportunity to introduce IDs not only to the latest research but also to alternative ways to fulfil professional development goals. In addition, IDs can serve in professional organizations, many of which have research divisions (e.g., AECT, QM). These venues expand the role of IDs to lead learning design and technology initiatives and exercise their management and leadership skills. In addition, volunteering in professional organizations can expand IDs' networks and the possibilities to explore research interests at a broader level.

Building an ID Research Network

Building a research network happens in many ways. IDs connect with other ID colleagues and scholars at professional conferences or through social media platforms who are interested in conducting research. IDs can approach colleagues and be curious about their work, share scholarly interests, discuss current trends in the field, explore collaboration for developing conference proposals, lead webinars, and propose collaborative research. In addition, IDs can build a professional network by promoting and participating in an ID research community where critical conversations about established and exploratory research approaches relate to SoTL, learning design, and technology. IDs can also initiate a research community or special-interest group with other IDs that allow them to explore common interests in more local contexts. (see Resources for Getting Started section for ideas).

IDs can determine their own research community's organization and identify the goals to accomplish, as well as to establish processes to discuss overarching topics of interests, methodology training, and human-subjects training. In ID research networks and communities promote deliberate critical thinking to serve as avenues for collaborative learning and innovation. Additionally, through research networks, explore options for developing or honing research skills collaboratively. For instance, Quality Matters and OLC offer research workshops oriented towards research in learning design. For more advanced research topics, the American Educational Research Association (AERA) offers sessions on research methods.

Resources for Getting Started

This section provides a list of a few useful resources to help the readers with a starting point to enter the research arena.

Peer-reviewed Journals

- Journal of Applied Instructional Design
- British Journal of Educational Technology
- International Journal of Designs for Learning

- International Journal of E-Learning and Distance Education
- Journal of Scholarship of Teaching and Learning
- TechTrends
- Journal of the Learning Sciences
- Campus Virtuales (Revista Iberoamericana de Tecnología Educativa)
- Em foco (Revista Científica em Educação a Distância)

Professional Organizations

- International Society for Performance Improvement (ISPI)
- Association for Educational Communications & Technology (AECT)
- Western Interstate Commission for Higher Education (WICHE)
- Online Learning Consortium (OLC)
- EDUCAUSE
- Quality Matters Instructional Design Association (QM IDA)
- Instructional Technology Council (ITC)
- European Association for Research on Learning and Instruction (EARLI)
- Association for the Advancement of Computing in Education (AACE)
- Instructional Design and E-Learning Professionals (LinkedIn Group)

Research Approaches

- AERA Virtual Research Learning Series (2021)
- Research Methods in Learning Design and Technology (Romero-Hall, 2020)
- Design-based Research (Website of ID - The University of Georgia, 2006)
- The Students' Guide to Learning Design and Research (Kimmons & Caskurlu, 2020)
- Foundations of Learning and Instructional Design Technology (West, 2018)

Research Communities

- Reach out to a local network and organize a research community
- Meet regularly with colleagues and explore the latest trends in learning design and technology

- Organize a reading club to review seminal works and examine perspectives or spark innovation
- Contribute to a collaborative document with research resources (e.g., workshops, webinars, courses)
- Use social media to find collaborators
- Complete training for human-subjects research

Implications for IDs Leading through Research

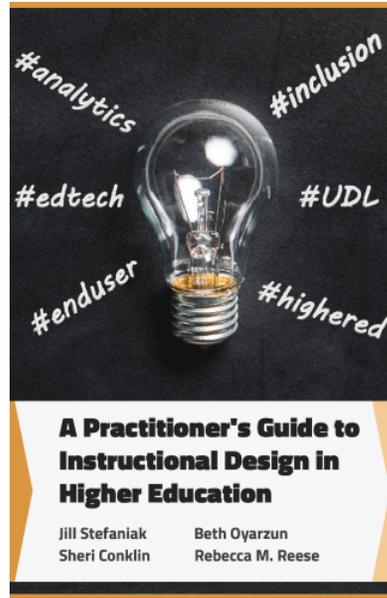
Research has mostly been the responsibility of academic researchers as the producers of knowledge and generators of theory. With the evolving landscape of learning design and technology, IDs' roles and responsibilities are evolving (Ritzhaupt et al., 2020) and IDs are becoming leaders of digital transformation (Decherney & Levander, 2020). This positions IDs in unique situations to contribute to the SoTL through research efforts that are critical to improving student learning (Klein et al., 2005). Supporting IDs with initiatives to conduct research is necessary for bringing to the forefront their expert voices in the field and to facilitate their navigation across the continuum of professional development from practitioners to scholars (Irlbeck, 2011). As researchers and IDs in learning design and technology, we need to: (1) recognize the critical role of IDs in the innovation of teaching, learning, design, and technology, (2) leverage the research that IDs are already doing to inform their practice, (3) offer a mix of professional development and experience in research, (4) recognize pioneering work to help train faculty and develop rapid-response instructional practices (especially in light of the covid-19 crisis), (5) acknowledge IDs' potential to conduct research to inform the new landscape of learning design. This chapter underscores the need to open opportunities for IDs to actively engage in research to advance the field of instructional design and to influence new designs of learning experiences.

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