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The Journal of

# Applied Instructional Design

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**AECT**

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# **The Journal of Applied Instructional Design**

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# About the Journal

During the past 50 years, journals in the field of instructional design have been responsive to the changing needs of both scholars and to a lesser degree, the practitioner. We have seen an evolution of AVCR to ECTJ, the emergence of JID, and finally the merging of ECTJ and JID to form ETR&D. ETR&D is a widely recognized, scholarly journal in our field that maintains rigorous standards for publications.

During the past 50 years, we have also witnessed a change in the field due in part to the success of instructional design in business and other nonschool environments. The number of instructional designers working outside the university has dramatically increased. Of particular importance is the rise in the number of instructional designers with doctorates who consider themselves practitioners, but not necessarily scholars. This growing group of designers might be best described as reflective practitioners who can make a significant contribution to the knowledge of our field.

This growth and success in the application of instructional design has also changed the field. From the early days of the field until the mid-1980's, the theory and practice of instructional design was almost exclusively influenced by the academic community. With the growth of instructional designers, the theory and practice of the field is now defined by both academics and practitioners. There is a need for greater communication between the scholars and the practitioners in a scholarly journal that will support innovation and growth of our knowledge base.

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## Goals

The purpose of this journal is to bridge the gap between theory and practice by providing reflective practitioners a means for publishing articles related to the field. The journal establishes and maintains a scholarly standard with the appropriate rigor for articles based on design and development projects. Articles include evaluation reports (summative and formative), lessons learned, design and

development approaches, as well as applied research. The articles are based on design and development projects as opposed to pure research projects and focus on lessons learned and how to improve the instructional design process. Rigor is established through articles grounded in research and theory.

A secondary goal of this journal is to encourage and nurture the development of the reflective practitioner in the field of instructional design. This journal encourages the practitioner as well as collaborations between academics and practitioners as a means of disseminating and developing new ideas in instructional design. The resulting articles inform both the study and practice of instructional design.

## Philosophy

This journal will provide a peer-reviewed format for the publication of scholarly articles in the field of applied instructional design. The journal recognizes the role of the practitioner in the work environment and realizes that outside constraints may limit the data collection and analysis process in applied settings. The limitations of real-world instructional design of the practitioner can still provide valuable knowledge for the field.

## Sponsoring Organization

JAID is a publication of the [Association for Educational Communications and Technology](#) (AECT).

JAID is an online open-access journal and is offered without cost to users.

## Journal Staff

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## About AECT



**ASSOCIATION FOR  
EDUCATIONAL  
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TECHNOLOGY**

The [Association for Educational Communications and Technology](#) (AECT) is a professional association of instructional designers, educators and professionals who provide leadership and advise policy makers in order to sustain a continuous effort to enrich teaching and learning. Seizing opportunities to raise awareness and leverage technology, our members may be found around the world in colleges and universities, in the Armed Forces and industry, in museums, libraries, and hospitals, and in the many places where educational change is underway. Our research and scholarly activity contribute to the knowledge base in the field of Learning. We are on the cutting edge of new developments and innovations in research and application.

AECT is the premier organization for those actively involved in the design of instruction and a systematic approach to learning. We provide an international forum for the exchange and dissemination of ideas for our members and for target audiences. We are the national and international voice for improvement of instruction and the most recognized association of information concerning a wide range of instructional and educational technology. We have 24 state and six

International Affiliates all passionate about finding better ways to help people learn.

Since 1923, AECT has been the professional home for this field of interest and has continuously maintained a central position in the field, promoting high standards, in both scholarship and practice with nine Divisions and a Graduate Student Assembly that represent the breadth and depth of the field. Other journals sponsored by AECT include [Educational Technology Research and Development](#) and [TechTrends](#).

*The Journal of Applied Instructional Design* (JAID) is a refereed online journal designed for the publication of scholarly articles in the field of applied Instructional Design. The purpose of JAID is to provide the reflective ID scholar-practitioners and researchers a means for publishing articles on the nature and practice of ID that will support the innovation and growth of our knowledge base. The journal is for practitioners, instructors, students, and researchers of instructional design.

## Call for Submissions

JAID is for reflective scholar-practitioners, who through documentation of their practice in ID, make significant contributions to the knowledge of our field. Authors are invited to submit articles documenting new or revised approaches to ID; the processes of ID including in-depth documentation of analysis, design, and development, implementation and evaluation; design-based research; as well as applied research. Articles must be based on instructional design projects as opposed to pure research projects and focus on documented processes, lessons learned, and how to improve the overall process of ID. Articles must be grounded in research and theory connecting the intellectual foundations of the ID field and how these foundations shape its practice.

The journal will establish and maintain a scholarly standard with the appropriate rigor for articles based on design and development projects. A secondary goal of this journal is to encourage and nurture the development of the reflective practitioner in the field of ID. This journal encourages the practitioner as well as collaborations between academics and practitioners as a means of disseminating and developing new ideas in ID. The resulting articles should inform both the study and practice of ID.

[Submit an Article](#)



## **Article Types**

JAID currently accepts submissions of three article types.

### **Instructional Design Practice**

This is an applied journal serving a practicing community. Our focus is on what practitioners are doing in authentic contexts and their observed results. These articles cover topics of broad concern to instructional design practitioners. The articles should represent issues of practical importance to working designers.

### **Research Studies on Applied Instructional Design**

JAID is interested in publishing empirical studies exploring the application of instructional design principles in applied settings. Quantitative and qualitative studies are welcome.

### **Instructional Design/Performance Design Position Papers**

JAID also accepts position papers that attempt to bridge theory and practice. Examples may include conceptual frameworks and new ideas facing the instructional design community. The paper must also provide enough information to allow the replication of the innovation or continuation of the research in other settings. Position papers must be based in the context of a theoretical framework. Efficacy data is strongly preferred, but not always required, contingent upon the potential generalizability or value of the innovation.

## **Submission Guidelines**

The journal will focus on in-depth applications of the ID process and publish a variety of articles including case studies of the ID process; application articles that go beyond a mere how-to approach that provide implementation insights, guidance and evaluation of a process; evaluation articles that focus on the viability of a product or process; applied research resulting from evaluation of materials, studies of project implementation, articles on ways to improve the ID process from the perspective of the practitioner, and short essays that provide a scholarly debate of relevant issues related to the application of ID and relevant book

reviews. When applicable, articles should include supplementary materials including examples of ID products, evaluation instruments, media files, and design artifacts.

The articles in the journal will be from the perspective of the scholar-practitioner rather than from the researcher. However, the manuscripts must demonstrate scholarly rigor appropriate to applied manuscripts.

Articles, including tables or figures, must follow APA 6th edition formatting and be submitted in a word or doc format using at least 12-point New Times Roman font.

Each article must have an abstract (75-100 words) and a list of keywords. While there is some flexibility in the length of an article, 2,000 to 4,000 words is a best-guess estimate. If in doubt, contact the editor prior to submitting the article.

Identifying information must only be located on the cover page including contact information for the first author.

You may contact the editors via email, if you have further questions.

[Contact the Editor](#)

# **A Model for Developing Instructional Design Professionals for Higher Education Through Apprenticeship**

## **Blending Theory and Practice**

Rae Mancilla & Barbara Frey

*In light of the growing number of instructional designers (IDs) of diverse educational and professional backgrounds in higher education, there is a need for formalized professional development programs. Currently no systematic pathway exists for equipping novice IDs with the requisite knowledge, skills, and experiences for successful performance and career growth. This article introduces the Development of Instructional Designers Apprenticeship (DIDA) model, comprised of four stages: (1) Observation and Modeling, (2) Tasks with Coaching, (3) Contextualized Practice, and (4) Reflection and Exploration. In this cognitive apprenticeship approach, an expert ID guides a novice through a continuum of tasks that graduate in level of difficulty over time. Case studies and sample tasks for each stage of development are provided as guides for implementation.*

Instructional Designers (IDs) devise solutions for education and training that improve learning and human performance across many industries (Bannan-Ritland, 2001), including business, healthcare, government, and education. In higher education, the demand for instructional design expertise continues to grow (Kumar & Ritzhaupt, 2017) as institutions strive to provide flexible and on-demand learning formats for non-traditional learners (e.g., online certificates, blended and hybrid courses, flipped classrooms, and stackable credentials). There are currently 13,000 instructional design professionals working in US colleges and universities (Intentional Futures, 2016). This figure is expected to increase by at least 13% in the next decade (Kim, 2015).

The role of instructional design in academia is multifaceted and varies based on placement within individual schools, departments, or centers for teaching and learning. IDs serve as curriculum designers, managers, trainers, and support specialists. They have a diversified and evolving skill sets, in the areas of soft skills, technical skills, project management, knowledge of learning theory, pedagogy, and instructional design (Ritzhaupt & Kumar, 2015). How IDs acquire the necessary skills and competencies for job performance, however, remains poorly understood (Ge & Hardré, 2010). Since few institutions confer degrees in instructional design or technology (Ashbaugh & Pina, 2014). Most IDs migrate into the field from other disciplines—as experienced faculty, administrators, technologists, librarians, and web developers— and require on the job training to equip them with the knowledge, practices, and identities central to design work (Manathunga, 2007).

Nonetheless, there is no systematic method for preparing new IDs to become experts in their profession once they are employed in academic settings. This has led to calls for scholarship addressing “a detailed examination of the progression from novice to expert practice by instructional designers” (Tracey & Boling, 2014, p. 658). Responding to the need for adequate on-site preparation for new IDs, we propose a professional development model grounded in the theories of cognitive apprenticeship (Collins et al., 1989) and situated learning (Lave & Wenger, 1990). This paper discusses the Development of Instructional Designers Apprenticeship (DIDA) Model, a developmental continuum to progress IDs from novice to expert in a series of four stages.

## **Preparation of Instructional Designers for the Higher Education Workplace**

The instructional design profession, especially in the online environment, is still relatively new with no clear or common career path. There is no universal profile for IDs, as they are a highly educated and diverse group of professionals holding primarily masters' or doctoral degrees, some with formal credentials in teaching, instructional design, instructional technology, or media development. Others possess training in library science, graphic design, technical writing, and faculty development (Intentional Futures, 2016). In the workplace, IDs wear titles such as online learning support specialist, instructional technologist, learning designer, eLearning specialist, multimedia specialist, and instructional developer (Fong et al., 2017).

The International Board of Standards for Training, Performance, and Instructions (IBSTPI) (2012) provides instructional design competencies commonly referenced

in business and industry training, instruction, and performance improvement. An area “characteristically unnoticed in recent history is the context of higher education and instructional design” (Kumar & Ritzhaupt, 2017, p. 371). As such, the requisite competencies and skills required of IDs in higher education remain ambiguous and ill-defined. Recent reports have classified instructional design responsibilities into four general categories—designing, managing, training, and providing support to faculty (Beirne & Romanoski, 2018). Research examining instructional design practices note that IDs frequently support faculty subject matter experts in designing courses, conducting needs analyses, applying design/learning theories, and assessing program effectiveness. Ultimately, IDs serve students and aim to help them learn more efficiently (Kumar & Ritzhaupt, 2017). IDs must also be able to multitask, team-build, develop relationships, manage projects, and market instructional design services (Villachica et al., 2010).

Instructional design research has extensively documented the differences between expert and novice designers. In Sugar’s (2014) meta analysis of instructional design, he notes that expert designers, unlike novices, recognize patterns, infer relationships between issues and solutions, disregard irrelevant information, and apply instructional strategies from previous experiences. Even when IDs are prepared in graduate education programs focused on instructional design, they often struggle to apply design models to complex cases, problem-solve under pressure, and adapt prescribed best practices for individual courses or programs (Stefaniak, 2017).

Due to their lack of preparedness (Tate, 2017) and the evolving nature of the field, many academic institutions that hire new IDs must supplement their formal education with specialized internal training, webinars, professional memberships, and conferences. The Online Learning Consortium, Quality Matters, Association for Educational Communications and Technology, and Educause are key providers of an ID’s professional development.

## **Traditional Apprenticeship, Cognitive Apprenticeship, and Instructional Design**

Before the advent of formal schooling, job-embedded learning through apprenticeship was the primary method for equipping professionals for the workplace. Traditional apprenticeship has been considered a natural way to learn, where “apprentices learn their field by watching and assisting a master of a trade or practice” (Dickey, 2008, p. 507). By the end of this interchange between expert and novice, the novice should possess the necessary knowledge, skills, and tools of the trade to perform their job function without assistance.

However, the affordances of apprenticeship extend beyond the mastery of physical tasks. It can aid in teaching novices the implicit mental models and habits of mind of an expert (e.g., problem-solving, task analysis), through a process referred to as cognitive apprenticeship (CA). In CA, an expert's thinking is made visible to a novice by a series of instructional phases situated in an authentic learning environment, known as situated learning—modeling, coaching, scaffolding, articulation, reflection, and exploration (see Collins et al., 1989). Like traditional apprenticeship, CA focuses on learning through guided experience, with the goal of moving a novice to autonomy by gradually removing instructional supports.

Both traditional and CAs have been used to successfully prepare new professionals for a variety of career paths, including art, aviation, dentistry, education, engineering, law, medicine, and nursing, among others. Within education, novice-expert apprenticeship relationships can be observed in pre-service student teaching practicums, graduate teaching assistantships, and the postdoctoral continuum from student researcher to teaching scholar. In higher education, most research on CA has focused on teacher training programs, where they have been shown to positively impact educators' attitudes, instructional planning, technology use, and knowledge transfer (Denner & Burner, 2008; Dickey, 2008).

In the field of instructional design, apprenticeship has been identified as a promising pathway for helping new designers hone their craft and develop expertise through immersion in the process (Tracey & Boling, 2014). A cognitive apprenticeship instructional design curriculum was initially proposed by Ertmer and Cennamo (1995) as a classroom teaching model for fostering competency among graduate students. Their model outlined six levels of instructional activities aligned with the pedagogical features of Collins and colleague's (1989) CA framework. Activities encouraged individual and team problem-solving of simulated design cases and students provided the rationale for decision-making, while the instructor assumed the role of design expert and project manager. Although overall successful in teaching the principles of design thinking, the authors reported that the lack of realistic design problems was a limitation of the CA classroom experience.

Currently there are no documented examples of CA programs for IDs in the higher education workplace, although Ertmer et al. (2008) have recommended that novice and expert IDs be paired during the onboarding process to facilitate mentoring. One recent effort in this area is Penn State University and Educause's cross-institutional ID2ID program, where expert and novice IDs are partnered together for a 6-month period to informally share best practices and discuss common design challenges (Beirne & Romanoski, 2018). While early feedback

from the peer mentorships has been positive, the program does not offer systematic professional development for IDs, as the content, experiences, and direction of interactions is peer-driven (e.g., participants determine meeting frequency, topics, goals). It is also important to note that instructional design roles across institutions can significantly differ in scope and course development foci (e.g., online, residential, blended). Therefore, there remains a need for localized CA programming within individual learning design units to acclimate novice IDs to the instructional design role within the context of their specific institution.

## **Introducing the Model for Developing Instructional Designers Apprenticeship (DIDA)**

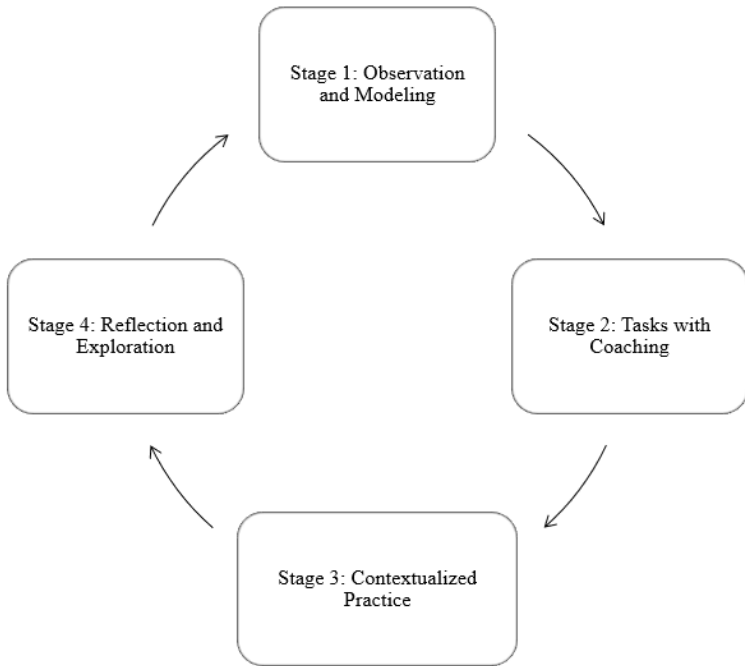
The Development of Instructional Designers Apprenticeship model (DIDA) is an extension of Ertmer and Cennamo's (1995) work on cognitive apprenticeship streamlined for the higher education workplace, rather than the classroom. It is a continuum of immersive tasks designed to foster competence among recently employed, novice IDs with little to no practical experience in design knowledge, practices, processes, and thinking. The professional background of a newly hired ID determines the starting point of the model, potentially at Stages 1, 2, or 3.

A primary assumption of the model is that IDs are embedded in an authentic context for learning as designers in the field of higher education. Situated learning is therefore the backdrop of the model rather than an isolated stage. Articulation refers to "any method of getting students to articulate their knowledge, reasoning, or problem-solving processes" (Collins et al., 1989, p. 482). At the heart of the model, novice IDs verbalize their thought processes with their expert ID mentor and members of the design team at their institution throughout each stage.

Figure 1 provides an overview of the 4 stages of DIDA: (1) Observation and Modeling, (2) Tasks with Coaching, (3) Contextualized Practice, and (4) Reflection and Exploration. These stages can be iterated or extended based on the needs of the entry-level ID or institution. An institution might align the stages of DIDA to their provisional period of employment.

### **Figure 1**

*Stages of the Developing Instructional Designers Apprenticeship Model*



The DIDA stages encompass pedagogical features relevant to the development of an instructional design professional. A high-level description of each of the stages follows. A full summary of tasks for the DIDA process can be found in Appendix A. It is not an exhaustive list but provides a foundation that may be customized according to the needs of the institution.

### **Stage 1: Observation and Modeling**

Provides multiple opportunities for the novice ID to engage in peripheral observation of experienced instructional design practitioners at work. *Observation* is key for exposing the novice to the “implicit cognitive strategies and rules-of-thumb [that] heavily influence the design process” (Kirschner et al., 2002, p. 87).

Ertmer et al. (2008) highlight that the heuristics of expert IDs cannot “be found in an instructional design textbook but [are] much more idiosyncratic and drawn from the unique collection of previous experiences” (p.28), like those of a seasoned ID. Witnessing the process of real-world problem-solving (successes and failures)



in its entirety is necessary for building the novice's experience base.

Similarly, *modeling* entails explicitly demonstrating the behaviors and cognitive processes used by experienced designers. Here, expert IDs employ think-aloud (Perez & Emory, 1995) or design-aloud protocols to model foundational knowledge, patterns of thinking (e.g., analyzing ill-structured problems), and concrete design skills for the novice to try in the future (e.g., creating a course map). Through ongoing communication, experts verbally articulate their approach to a design problem (e.g., determining the scope and sequence of a unit), teaching the novice to think and act as a professional designer (Ertmer & Cennamo, 1995).

Sample observation and modeling experiences may include:

- Observing course authoring in the Learning Management System (LMS) environment.
- Modeling the process for developing course development timelines and milestones.

## **Stage 2: Tasks with Coaching**

Focuses on experienced IDs coaching the novice through basic design tasks, while gradually decreasing their level of support. *Coaching* is the "one to one process of helping others to improve, to grow, and to get to a higher level of performance, by providing focused feedback, encouragement and raising awareness" (Pousa & Mathieu, 2010, p. 3). Here the expert ID "coach" pushes the novice to actively demonstrate the knowledge that they have acquired from the observation and modeling stages (Ertmer & Cennamo, 1995).

Expert practitioners may assist with organizational skills and goal setting, in addition to probing the novice to justify their design decision-making, helping them recognize flaws, and providing advice on alternative solutions when appropriate. Coaching interactions may consist of question and answer sessions, timely debriefings, and explanations as the novice begins acquiring structured, hands-on experience in the field.

Sample coaching tasks may include:

- Complete a MOOC on copyright, higher education pedagogy, web accessibility, or project management and design deliverables that apply the concepts.
- Outline a faculty development session on an emerging educational technology. Receive feedback on strengths and areas of improvement with

an experienced ID.

### **Stage 3: Contextualized Practice**

Involves moving the novice ID toward independent and applied problem-solving in complex, authentic situations. Here the novice moves from designing individual elements of a project (e.g., tasks) to entire projects, applying design principles in an iterative and context-driven environment (Tracy & Boling, 2014).

Work in this stage is based on Vygotsky's (1978) Zone of Proximal Development (ZPD), which contrasts the problem-solving abilities of a learner with and without the guidance or collaboration of a more capable expert. The term 'proximal' emphasizes skills that a novice ID is close to mastering, but that require some scaffolding. Common scaffolds include models, templates, and resources that provide structure (e.g., copyright flowchart for guiding copyright decision-making) as the expert ID's support wanes.

The experienced ID provides design problems at an appropriate level of complexity for the novice that are meaningful, attainable, and incorporate a level of desirable difficulty. Opportunities may entail actual problems faced by the design team, such as re-designing ambiguous assignment instructions based on student feedback or assessing a new learning technology for web accessibility. The novice strives to address use cases by offering a range of potential solutions and seeking feedback from their expert counterpart. To monitor progress and promote growth, the expert's feedback should be goal-directed, timely, actionable, balanced, and ongoing (Wiggins, 2017).

Sample contextualized practice opportunities might include:

- Develop a new course syllabus that demonstrates instructional alignment and clear policies.
- Review an existing course design and offer recommendations for enhancing interaction.

### **Stage 4: Reflection and Exploration**

Entails the self-assessment of past, present, and future instructional design professional development. At this final and ongoing stage, the novice ID has already acquired foundational skills and now applies a critical lens to their design decisions with an eye toward continuous improvement. In his analysis of professional growth, Schön (1983) distinguishes between reflection *in* action and reflection *on* action. Reflecting *in* action involves the novice ID actively thinking

about decisions as they are made, while reflecting on action occurs after the event, transitioning them to achieve a higher level of understanding. In the reflection on action process, the novice ID compares their completed designs to expert examples, bringing together theory and practice. Reflective journaling or blogging are common strategies to promote reflection. The following prompts could be addressed in these entries (Ambrose et al., 2010):

- What did you learn by completing this project?
- What questions do you have?
- What would you do differently?
- How have your skills evolved?

*Exploration* is the natural fading of supports as the novice ID takes responsibility for their learning (Collins et al., 1989). In this stage, the expert ID transitions from coach to mentor for the purpose of helping the novice advance their career beyond the resources and skills of the design team. Mentorship supports lifelong learning, which is a prerequisite for the instructional design profession, as it is constantly evolving and making use of emerging technologies.

Examples for exploration might include:

- Generating a list of short and long-term professional development goals
- Becoming a member of a professional association

## **Applying the DIDA Model: A Case Example**

As all learning design units differ in structure (Vu et al., 2016), the following case study presents one instance of how the model might be applied in practice.

Consider Central State University (CSU) a large, research 1 institution with a centralized Center for Teaching Excellence (CTE) of ten years directed by Dr. Deshane Stephens. A team of eight IDs and technologists supports faculty in the design, development, and delivery of online and hybrid courses. Services include consulting on curriculum design, faculty development on pedagogy, technology integration, multimedia production, and quality assurance.

With levels of experience in higher education and online learning varying from two-10 years, the team is well-positioned to implement mentorship programs like DIDA, as several team members are senior-level IDs and can fulfill the role of expert ID in the model.

CSU adheres to a six-month provisional period for evaluating new employees. Each

employee's performance is also reviewed annually. At the CTE, new employees are onboarded with the DIDA model. The model is adapted according to the new hire's level of experience. The Center recently hired two new IDs, Graduate Greg and Corporate Carmen.

## **Graduate Greg**

Graduate Greg completed his Master's in Instructional Design at CSU and was employed as a student worker at the CTE for one year prior to accepting his new role. He is familiar with the Center's practices and processes but was hired as an entry-level designer because he lacks real-world design experience.

## **Corporate Carmen**

Carmen comes to the CTE with eight years of corporate banking instructional design expertise. She specialized in developing training materials for online delivery. Her most recent projects include sexual harassment, diversity in the workplace, and communication. She lacks experience in collaborating with subject matter experts, learning management systems, and the culture of higher education.

Given their differing backgrounds, Dr. Deshane has proposed that Graduate Greg begin the model at *Stage 1: Observation and Modeling*, while Corporate Carmen begins at *Stage 2: Tasks with Coaching*.

Understanding that full completion of the DIDA model may extend from months to years for an individual employee, Dr. Deshane has proposed the following timeline to align some DIDA developmental tasks with the six-month provisional period. The following tables depict the same task scaffolded at multiple stages to illustrate the progression of the model (see Tables 1 and 2).

### **Table 1**

*Graduate Greg*

<b>Concept</b>	<b>Months 1-2</b>	<b>Months 3-4</b>	<b>Months 5-6</b>
<i>Alignment</i>	Stage 1: Observation and Modeling Observe expert ID create a course map that <b>aligns</b> learning objectives, activities, and assessments for a lesson.	Stage 2: Tasks with Coaching Review an existing lesson for the <b>alignment</b> of learning objectives, activities, and assessments; Discuss observations and recommendations with expert ID.	Stage 3: Contextualized Practice Create a course map that <b>aligns</b> learning objectives, activities, and assessments for a lesson; Receive feedback from expert ID.
<i>Subject Matter Expert (SME) Collaboration</i>	Observe how expert ID facilitates a course development meeting with <b>SME</b> or faculty member.	Develop an agenda and supporting materials for a course development meeting with <b>SME</b> or faculty member; Discuss plans with expert ID.	Co-facilitate a course development meeting with expert ID and <b>SME</b> or faculty member.

**Table 2**

*Corporate Carmen*

<b>Concept</b>	<b>Months 1-2</b>	<b>Months 3-4</b>	<b>Months 5-6</b>
<i>Course Development Timelines</i>	Stage 2: Tasks with Coaching Collaborate with expert ID to create course development <b>timelines</b> on a variety of courses.	Stage 3: Contextualized Practice Draft course development timelines for simple to complex courses; Compare proposed <b>timelines</b> to actual timelines produced by expert ID.	Stage 4: Reflection and Exploration Reflect on similarities, differences, and best practices in the production of course development <b>timelines</b> ; Consult with expert ID.
<i>Accessibility</i>	Complete a workshop or MOOC on developing <b>accessible</b> digital materials; Meet with disability services specialist and expert ID to discuss barriers faced by online students with disabilities.	Create documents (e.g., Word, PowerPoint, and PDF) using accessibility checkers and applying ADA web <b>accessibility</b> compliance; Discuss with expert ID.	Create a matrix reflecting on the best practices in <b>accessible</b> course design and noting the impact/effort of each practice; Discuss matrix with expert ID; Identify areas for additional training.

The goal of varying Graduate Greg and Corporate Carmen's development timelines applies the concept of personalized learning for professional development.

## Discussion

The DIDA model was developed in response to the need for a detailed professional development pathway for novice IDs in higher education (Tracey & Boling, 2014). Unlike other academic roles, such as faculty and administrators, career growth for IDs is poorly defined. Coming from diverse backgrounds, many novice IDs are unaware of the competencies, opportunities, and tools of the trade needed to progress within their organization or the broader field of design. Each stage of DIDA helps to address this gap by providing novices with concrete ways to acquire the abstract knowledge and skills of an expert practitioner. Novice IDs benefit from the natural progression of the cognitive apprenticeship and increasing complexity of tasks beginning with *observation and modeling*, followed by *tasks with coaching*, *contextualized practice*, and ending with *reflection and exploration*.

One critically important feature of the DIDA model is its flexibility to be transferred across institutions and customized according to departmental structure and needs. The four stages of DIDA outline an iterative, rather than linear, process with multiple entry points for novice and semi-experienced IDs from non-academic contexts as illustrated in the cases of Graduate Greg and Corporate Carmen. Based on expert ID monitoring of progress, novice IDs can revisit entire stages or tasks within stages as needed. The task list, however, is not exhaustive or prescriptive and can easily accommodate advancements in educational research and technology (e.g., neuroeducation, changes to LMS). While the model was developed for IDs, it provides a foundation that can be modified for related fields such as instructional technology and faculty development.

The effective execution of the DIDA model relies upon several key factors, most importantly the availability of an expert ID, who can curate resources (Appendix B) and oversee the apprenticeship. DIDA would be best implemented in a mature design team setting with multiple experts to serve as coaches and mentors. As the expert and novice IDs maintain a close and ongoing relationship throughout the DIDA stages, administrative support is necessary for human resource allocation. The significant time commitment required of the expert ID may range from months to years. Therefore, administrators may consider adding apprenticeship responsibilities to the expert ID's job description. They may also distribute the expertise of senior team members across the stages, pairing the novice ID with multiple expert IDs. In addition to distributing the workload of instructional design

development, expert IDs likely have different design specializations (e.g., copyright, accessibility, assessment) to share with the novice ID.

The DIDA model offers opportunities for future research on the training and development of IDs in higher education. Next steps might include piloting the DIDA continuum of tasks in partnership with several institutions of varying size and complexity. Collaborative feedback from partners could help to refine the most effective practices for instructional design development and confirm timelines for task completion. Ideally, new tasks would be identified and added to the model. Expert IDs' tracking of novices' progress across the four DIDA stages would provide documented examples of instructional design growth and the unique professional development pathways to expertise in the field. Case studies would be useful in exploring the application of DIDA. They might focus on comparing novice IDs of differing entry levels, team structures (e.g., centralized or decentralized), or delivery modes (e.g., face-to-face, online, hybrid). Further research could also involve developing tools to evaluate novice ID progress at varying stages (e.g., surveys, rubrics, self-assessments, interview protocols).

In conclusion, as higher education continues to experience an influx of novice IDs, greater attention is needed for organizing their professional development. The DIDA model provides a working framework for developing the knowledge and skills of the novice ID by utilizing internal resources.

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# **A Study on the Services Motivating Instructional Designers in Higher Education to Engage in Professional Associations**

## **Implications for Research and Practice**

Albert D. Ritzhaupt, Jill Stefaniak, Sheri Conklin, & Kiran Budhrani

*The purpose of this research was to identify the professional association services relevant to instructional design professionals working in institutions of higher education. A conceptual framework connecting professional association services to the existing research on the leadership, career development, and networking of instructional designers in higher education is provided. Based on this conceptual framework and an existing instrument, we provide the design, development, and adjustment of a survey to measure professional association services relevant to instructional designers in higher education; and provide the preliminary validity and reliability evidence of this survey on an administration with  $N = 217$  instructional designers working in higher education. We titled this survey the Instructional Designer in Higher Education Professional Association Survey (IDHEPAS). The cross-sectional data were analyzed using exploratory factor analysis, descriptive statistics, internal consistency reliability, and correlation analyses. The analyses resulted in eight internally consistent factors explaining approximately 71% of the variability in these data: 1) Professional networking services, 2) Growth and advocacy services, 3) Professional communication services, 4) Ancillary discount services, 5) Leadership and mentoring services, 6) Relevant literature services, 7) Training and credentialing services, and 8) Vendor and continuing education services. These findings are discussed in detail, and recommendations for future research and practice are provided. The IDHEPAS was found to be a sound measurement tool for the stated purpose.*

Instructional design is a field and area of research grounded in facilitating learning and improving performance for all types of learners. Regardless of industry or context, instructional designers are expected to perform a variety of tasks, leading to the development of both instructional and non-instructional solutions, while working on and delivering the outcomes of a project (Cox & Osguthorpe, 2003; Kenny et al., 2005; Sugar, 2014). There is a growing need for instructional designers in higher education as more institutions of higher education (e.g., universities or community colleges) are expanding their course offerings using blended and online learning platforms (Allen & Seaman, 2014). Higher education institutions are recognizing the need for faculty to be effectively trained and supported in their instructional design and technology integration efforts (Bickerstaff & Cormier, 2015; Chiasson et al., 2015; Elliott et al., 2015).

Several studies have been conducted to identify competencies and roles required of instructional designers in the past several years (e.g., Daniels et al., 2012; Ritzhaupt & Kumar, 2015; Ritzhaupt & Martin, 2014; Ritzhaupt, Martin et al., 2018). Additionally, these research studies have explored how these competencies and roles are being applied across a variety of contexts (e.g. corporate, government, K-12, healthcare, higher education) (Christensen & Osguthorpe, 2004; Cox & Osguthorpe, 2003; Kenny et al., 2005; Ritzhaupt & Kumar, 2015; Rowland, 1992; Wedman & Tessmer, 1993). Additional research studies have been conducted to explore the challenges instructional designers encounter while working on authentic projects involving multiple stakeholders, constraints, and objectives (Gray et al. 2015; Hoard et al., 2017; Stefaniak et al., 2018).

Taking into account the role that instructional designers are serving in higher education (Kumar & Ritzhaupt, 2017; Litchfield, 2017; Ritzhaupt & Kumar, 2015) and the challenges that many encounter while working on instructional design tasks, it is important that the necessary resources, guidance, and support are provided to instructional designers, particularly in the context of higher education, to ensure their professional learning, networking, and career growth. In particular, professional associations are available to professionals in a wide range of fields (e.g., accounting, project management, information technology, etc.) to assist with these professional needs, and to engage members in the profession. Professional associations provide a wide-range of services to its members for their professional networking, leadership, and career development, including specific things like publishing journals, continuing education, certification, hosting conferences, and developing standards and the body of knowledge in a field (DeLeskey, 2003). As professional associations are typically volunteer associations, these groups are limited in the amount of time and resources they can allocate their constituents.

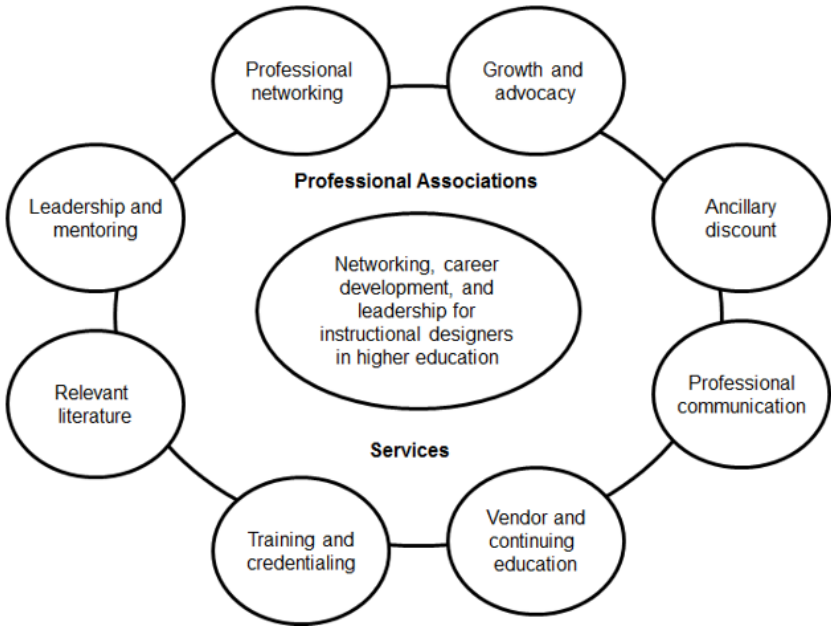
Instructional designers in higher education are emerging professionals found in all types (e.g., private versus public, university versus community college, etc.) of institutions of higher education, and often have evolving roles and responsibilities not always clearly defined by the job title (Ritzhaupt & Kumar, 2015). Other terminologies that refer to the instructional designer include faculty developer (Diamond, 2002), instructional technology consultant (van Leusen, 2013), and more job titles. Unfortunately, the job titles of those individuals serving as instructional designers are not always clear or consistent across organizations and contexts (Kang & Ritzhaupt, 2015). These instructional design professionals offer many value-added activities to institutions of higher education (their employers) ranging from course design and development to supporting faculty in delivering online courses to facilitating meaningful workshops to conducting summative evaluation and research (Kumar & Ritzhaupt, 2017). Instructional designers in higher education are often in charge of developing faculty pedagogical and technological skills (Hosler, 2013; Nworie, 2009). While several professional associations (e.g., Online Learning Consortium or EDUCAUSE) are available to instructional designers in higher education, these nascent professionals have professional needs that have not been systematically studied and matched to the services provided by professional associations. Instructional designers in higher education must possess a variety of knowledge skills, including learning theories and instructional design models, soft skills, the capacity to learn independently, information and communication technology skills, project management skills, and superior written and oral communication skills (Ritzhaupt & Kumar, 2015). Professional associations have an obligation to provide the necessary services to assist with the professional networking, leadership, and career development of these professionals.

## **Conceptual Framework**

The conceptual framework guiding this study involved taking a closer look at how instructional design professionals in higher education leverage their memberships in professional associations to enhance their leadership, career development, and networking opportunities. This framework was built upon existing research exploring the services that influence computing professionals to join professional associations (Umapathy et al., 2010), and long history and role of professional associations in any field of endeavor (e.g., DeLeskey, 2003; Glendenning & Gordon, 1997). Figure 1 provides a visualization of this conceptual framework in relation to the professional association services, and concepts of professional leadership, career development, and networking of instructional designers in higher education.

**Figure 1**

*Conceptual Framework of Professional Association Services*



## **Leadership**

Instructional designers in higher education perform many activities outside the confines of the application of instructional design models, emerging technologies, and learning theories. Some activities include serving as project managers or change agents in their organization, rolling out new innovations, creating budgets, managing schedules, mentoring faculty and other personnel, and conducting professional meetings either through meeting with diverse project teams or with supervisors and clients (Kenny et al., 2005). Due to the numerous tasks and roles instructional designers hold, it can be expected that instructional designers seek to improve their leadership skills through leadership, mentoring, professional growth, and advocacy activities in their organizations and beyond (e.g., general public). Because of the multiple roles of instructional designers in higher education, such as project management and supervision of teams, instructional designers seek to become involved in leadership, community building, and

advancement of profession (Gruen et al., 2000). Professional associations can offer various leadership activities for its members. Members may be seeking broader impact of the profession therefore seek leadership positions in special interest groups, committees, or task forces (Dodgen et al., 2003; Ritzhaupt et al., 2012) or even general leadership positions in the association at large (Lin et al., 2003).

Professional associations provide multiple ways to serve in a leadership capacity beyond the boundaries of the professional association. For instance, instructional designers working in higher education can provide mentoring to students in academic programs or other professionals to influence, direct, and develop individuals who want to enhance their careers. It also serves those who want to advance their careers by learning from senior members of the community on any type of professional issues, including legal and ethical matters (Glendenning & Gordon, 1997). Professional associations can sponsor mentoring through community engagement and events. One example of this type of event is AECT's Design and Development Instructional Design Competition. As Resig et al. (2017) stated, the competition developed their project management skills, gave access to a senior member for mentorship and guidance, and engaged them deeply within the professional associations' membership. Professional association members can impact through research and practice by developing expertise and engaging in other professional association services like publishing in peer-reviewed journals, presenting at conferences, and receiving professional recognition or awards for their efforts. Leadership professional association services and opportunities are essential to instructional designers in higher education.

## **Career Development**

Professional associations can help in the career development of instructional designers specific to the higher education sector. As noted by Larson and Lockee (2009), instructional designers that work in higher education have different competencies and skill requirements than instructional designers who work in other sectors. The problems instructional designers face in higher education often concerned with instructional improvement, instructional objectives, sequence of learning, instructional methods, assessment, and evaluation (Terlouw, 1997). However, the career of an instructional designer in higher education is not limited to just instructional activities alone. Instructional designers have to be multifunctional, where they have both instructional and technology competencies to support all faculty, students, staff, including both technical and social responsibilities on the job (Ritzhaupt & Kumar, 2015). Instructional designers are expected to demonstrate competency in tools (i.e. the use, development, programming, and/or management of tools), soft-skills (i.e., communication,

collaboration, customer service, leadership, decision-making), research and data analysis, evaluation, and project management (Christensen & Osguthorpe, 2004; Cox & Osguthorpe, 2003; Kang & Ritzhaupt, 2015; Kumar & Ritzhaupt, 2017; Ritzhaupt & Kumar, 2015).

Career growth and professional development in all these aspects is needed for instructional designers to stay current with the trends and adapt to the changing-nature of educational technologies. Instructional designers claim that while some of the competency areas stated previously were learned from their academic programs, much more is learned on the job and from their professional experiences (Ritzhaupt & Kumar, 2015). Many instructional designers come from a variety of backgrounds and their competency areas vary by education level and setting/industry (Byun, 2000; Christensen & Osguthorpe, 2004). Researchers have found that instructional designers have worked in other professions and held positions unrelated to instructional design before taking on their current position as instructional designer (Ritzhaupt & Kumar, 2015). Instructional designers in higher education differ from instructional designers in business and industry in that several have some teaching experience in K-12 or higher education to better understand the needs of students and faculty (Kumar & Ritzhaupt, 2017; Ritzhaupt & Kumar, 2015). It is no surprise that many instructional designers in higher education have advanced/masters degrees.

Kumar and Ritzhaupt (2017) noted that instructional designers who participated in professional development, professional communities (i.e., social media), conferences, workshops, and professional courses found these activities helpful in fulfilling their roles and responsibilities. Professional associations such as the ATD, AECT, and ISPI have created formal standards, which influence both the development of academic curricula for instructional design and the definition the professional requirements and descriptions for instructional design-related job roles and responsibilities. Professional associations can provide continuing education, professional development, and credentialing services to members to support their career development. ISPI and ATD have developed the professional certifications known as the Certified Performance Technologist (CPT) and Certified Professional in Learning and Performance (CPLP), respectively. However, these certifications may not be appropriate for the unique context of instructional designers in higher education.

To recruit and retain professionals in the instructional design field, professional associations can utilize various resources such as listservs, social media, conference proceedings, member directories, discussion forums, journals, white papers, and magazines to provide additional avenues for career development and



to keep instructional designers up-to-date to recent research or trends. Additionally, these professional associations can aggregate job titles and job announcements from instructional design and technology job boards to provide access to challenging career opportunities (e.g., Chronicle of Higher Education, HigherEdJobs) to help instructional designers become aware of, and find employment that better suits their needs and professional expertise (Umapathy & Ritzhaupt, 2011). Professional associations can also organize career events and job fairs at conferences (Umapathy & Ritzhaupt, 2011). Professional associations bear a responsibility to provide career development opportunities for its members.

## **Networking**

Professional networking opportunities not only support activities that bring professionals together, they provide occasions, both formally and informally, for mentoring both inside and outside of the workplace. Mentoring in a professional network assist the mentee through the guidance and navigation of their career (Higgins & Kram, 2001, de Janasz & Sullivan, 2004). These mentoring programs can reach professionals practicing in the field and students seeking to enter the profession. Examples of networking activities include: access to local meetings with experts in the field, annual conferences, access to social events (e.g., parties, field trips), and access to social media and other forms of communication technologies, like member directories, discussion forums, user and special interest groups, and listservs (Ritzhaupt et al., 2008). As noted, professional associations can provide services to enhance the awareness and acumen of instructional designers in higher education by providing news on technological and pedagogical developments, research developments, and even the latest vendor solutions through intentional and professional engagements bringing other professionals together. All the services provided by professional associations can be linked to the networking opportunities to engage with other professionals sharing similar interests and concerns.

## **Purpose**

Thus, the purpose of this research was to identify the professional association services relevant to instructional design professionals working in higher education. More specifically, we are interested in the professional association services that instructional designers in higher education desire and need for their professional function. To this end, we attempted to design, develop, and validate a survey to validly and reliably measure these factors for this target population of interest by collecting data from these working professionals. Our overarching

research question is: What professional association services do instructional designers in higher education need for their professional networking, leadership, and career development? We used the conceptual framework described above to document the professional association services desired by instructional designers working in higher education.

## Method

### Participants

A total of  $N = 309$  participants opened the online survey and agreed to the consent page. However, a substantial amount of participants either did not complete the survey or did not meet our screening criteria (i.e., instructional designer working in higher education) for inclusion ( $n = 30$ ). We excluded participants that did not complete at least 50% of the items on the survey. A final sample of  $N = 217$  or 70% instructional design professionals completed at least 50% of the final instrument and were retained in the sample for further analysis. As illustrated in Table 1, the participants represented a wide range of backgrounds. The participants had a wide range of experience from less than one year to 35 years with an average of  $M = 7.94$  ( $SD = 6.10$ ). Nearly three quarters of the participants were female, and the participants largely identified as White/Caucasian at approximately 81% of the sample.

Seventy-five percent of the participants worked at public institutions of higher education, and the participants could generally be classified as highly educated with 62% possessing a master's degree and 28% holding a doctoral degree. The participants were members of a wide-variety of professional associations with higher percentages in the Online Learning Consortium (OLC) (47%) and EDUCAUSE (45%). The size of the institutions of higher education varied according to the reported number of employees. More than 50% of the respondents indicated their institutions provided either full or partial support for professional association memberships. Income levels normally distributed around \$50,001-\$75,000 with more than 60% of the participants reporting this category. Participants were located in 37 different states in the United States ranging from California to Maine, and  $n = 6$  participants were located outside the U.S.

### Table 1

*Demographic Characteristics of Instructional Design Professional Survey Respondents*

Demographic Variable	Categories	n	%
Gender	Female	161	74.19
	Male	55	25.35
Income Level	Not reported	2	0.92
	0-\$25,000	3	1.38
	\$25,001-\$50,000	26	11.98
	\$50,001-\$75,000	133	61.29
	\$75,001-\$100,000	40	18.43
	\$100,000-\$150,000	12	5.53
Race	>\$150,000	1	0.46
	American Indian	5	2.30
	Alaska Native	1	0.46
	Asian	13	5.99
	Black/African American	19	8.76
	Hawaiian/Other Pacific Islander	1	0.46
	Hispanic/Latino	16	7.37
Sector of Economy	White/Caucasian	176	81.11
	Private	53	24.42
Highest Level of Education	Public	164	75.58
	High School	1	0.46
	Associate	1	0.46
	Bachelor	13	5.99
	Master	134	61.75
	Specialist	4	1.84
	Doctorate	59	27.19
Professional Association Membership	Other	5	2.30
	ATDF	21	9.68
	AACE	10	4.61
	AECT	33	15.21
	EDUCAUSE	98	45.16
	IEEE TCLT	5	2.30
	ISPI	5	2.30
	ISTE	18	8.29
	OLC	103	47.47
	eLearning Guild	42	19.35
Number of Employees in Institution	USDLA	16	7.37
	0-100	4	1.84
	101-250	9	4.15
	251-500	17	7.83
	501-1000	35	16.13
	1001-2,500	31	14.29
	2,501-5,000	31	14.29
	5,001 or more	55	25.35
Support for Professional Association Membership	I don't know	35	16.13
	None	105	48.39
	Partial reimbursement or payment	18	8.29
	Full reimbursement or payment	91	41.94

## Instrument Design and Development

This research study employed and tailored a research instrument previously used to measure the services motivating professional association membership of computing professionals. This survey was titled the *Ideal Computing Professional Association Survey* and preliminary validity and reliability evidence was provided on a sample of  $N = 220$  participants in one computing professional association (Ritzhaupt, Umaphy, & Jamba, 2008; Ritzhaupt, Umaphy, & Jamba, 2012). The original survey had 52-items organized into seven domains: *Career-enhancement*

*services, Information dissemination services, Professional networking services, Communication services, Member discount services, Leadership and community services, and Advocacy services* (Ritzhaupt, Umaphy, & Jamba, 2012). To be applicable to the present research study, several modifications had to be made to broadly address the current professional needs of instructional designers in higher education and to match the current organizational structure and services provided by the *Association for Educational Communications and Technology* (AECT).

First, a revised conceptual framework (described above) was developed based on the literature surrounding the unique characteristics and needs of instructional designers working in the context of higher education, the current structure and services offered by AECT, and the existing structure of the original survey. Second, the revised survey was carefully reviewed by members of the research team with expertise in scale development, and subsequently, administered to four instructional designers working in higher education using a think aloud protocol to cognitively validate the survey items using well-established systematic procedures (Payne, 1994; Trenor et al., 2011; Willis et al., 1991). This procedure ensured the clarity and intent of the items matched our intended purpose. This process led to several revisions to the wording of the items and slight re-organization to the survey. The resulting final draft of the survey has 44-items using a modified 5-point Likert scale format (5 = Strongly Agree; 4 = Agree; 3 = Neither agree, nor disagree; 2 = Disagree; 1 = Strongly Disagree). The survey was ported to the Qualtrics survey management system with two screening questions (e.g., Do you presently work for an institution of higher education?), a background section (including items like gender, age, experience, job title, education level, etc.), and seven open-ended questions (e.g., What factors encourage your participation in a professional association?). The revised survey was given the title *Instructional Designer in Higher Education Professional Association Survey* (IDHEPAS). Note, we only report the quantitative data collected in this article.

## **Data Collection Procedures**

The IDHEPAS was released to a wide audience of the professional instructional design community using an assortment of approaches: 1) instructional design listservs (e.g., Educause instructional designer listserv, ITFORUM listserv), 2) social media outlets for instructional designers (e.g., Facebook and LinkedIn instructional designer professional groups), 3) scraped community college and university websites for instructional designers in three states in the southeastern United States, 4) alumni listservs from academic programs (e.g., University of Florida, Boise State University, Florida State University, University of South Florida), and 5) invitation emails to the staff of *Centers for Teaching Excellence* at

62 different universities. Since the survey was anonymous, participants were encouraged to share the survey with members of their professional community serving in the higher education capacity - a snowball sampling approach. The online survey was accessible for a 3-week period, and during this time, two reminder emails or notifications were sent out to all communication methods noted above. Since so many different approaches to recruiting participants were used, response rates cannot be determined for these data.

## Data Analysis

Data were subjected to a variety of analyses, including descriptive statistics analysis, internal consistency reliability analysis, exploratory factor analysis (EFA), and correlation analysis (i.e., Pearson  $r$  correlations among factors on IDHEPAS). Since major revisions were made to the original survey, an EFA was the most appropriate data analysis method. EFA was conducted to explore the underlying structure of the data collected using the IDHEPAS and to provide meaningful labels to the factors on the IDHEPAS. Descriptive statistics analysis was conducted to examine the patterns in this cross-sectional dataset, and to characterize the various factor on the IDHEPAS for these data. Internal consistency reliability using Cronbach's alpha was used to provide reliability evidence for these data. Correlation analyses were employed to examine the internal structure of the measures. Underlying assumptions of the various statistical methods were evaluated. All quantitative analyses were conducted using SPSS version 25. An alpha level of .05 was used for all statistical tests.

## Results

The results are presented by each type of analysis conducted on these cross-sectional data. We first examine the data for the assumptions for conducting EFA. Bartlett's test of sphericity for these data had a Chi-square of 8,134.90 ( $p < .001$ ), which suggested the intercorrelation matrix contained adequate common variance. The Kaiser-Meyer-Olkin measure of sampling adequacy was 0.94, which is above the 0.50 recommended limit (Kaiser 1974). The participant-to-item ratio for the data was approximately ~5:1. While the participant-to-item ratio is below the 10:1 ratio suggested by Kerlinger (1974), the ratio is near thresholds described as more than adequate by some researchers in maintaining factor stability (Arrindell & Van der Ende 1985; de Winter, Dodou, & Wieringa, 2009; Guadagnoli & Velicer 1988). Thus, these data appeared to be well suited for EFA.

## Exploratory Factor Analysis

The EFA model was executed using principal axis factoring and an oblique (promax) rotation, as the factors were anticipated to be related. The pattern matrix is reported in the Appendix. The number of factors retained was based on the Kaiser criterion (Eigenvalue > 1) and inspection of the Screen plots generated. Items were assigned to factors based on the greatest values in the pattern matrix. The EFA data from the initial model showed eight factors and data were extracted in eight rotations. The data did not exhibit a simple structure in the pattern matrix; however, all coefficients used to assign items to factors in the pattern matrix were at or above 0.44. The factor model explained ~71% of the variance in these data with the 8-factor solution. Although the data did not lead to a truly simple structure in the pattern matrix, the items did load into a meaningful factor structure to explain these data. Thus, the eight factor solution was adopted for these data. Table 2 provides the Eigenvalues, variance, and cumulative variance for the factors on the IDHEPAS. Notably, the *Professional networking services* factor explained approximately 44% of the variance in these data.

**Table 2**

*Eigenvalues, Variance, Cumulative Variance by Factor Labels*

<b>Factors</b>	<b>Eigenvalues</b>	<b>Variance (%)</b>	<b>Cumulative Variance (%)</b>
1. Professional networking services	19.406	44.105	44.105
2. Growth and advocacy services	3.133	7.121	51.226
3. Professional communication services	2.225	5.056	56.282
4. Ancillary discount services	1.688	3.837	60.119
5. Leadership and mentoring services	1.451	3.297	63.416
6. Relevant literature services	1.219	2.771	66.187
7. Training and credentialing services	1.167	2.652	68.839
8. Vendor and continuing education services	1.051	2.389	71.227

Table 3 provides the factor label, mean, standard deviation, skewness, kurtosis,

number of items, and Cronbach’s alpha for the factors. As can be gleaned in Table 3, the highest scores were the factors *Professional networking services* at  $M = 4.39$ , and *Relevant literature services* at  $M = 4.35$ . Also notable and above the 4.0 threshold are the factors *Training and credentialing services* ( $M = 4.15$ ), *Professional communication services* ( $M = 4.06$ ), and *Vendor and continuing education services* ( $M = 4.01$ ). The lowest scoring factor below the 3.0 threshold was *Ancillary discount services* ( $M = 2.99$ ). Not all of the factors appear to be normally distributed as evidenced by the skewness and kurtosis coefficients for *Professional networking services*, *Growth and advocacy services*, and *Relevant literature services*. All of the internal consistency reliability coefficients are above the 0.70 social science standard (Nunnally, 1978). Generally speaking, the IDHEPAS has an internally consistent structure for these data.

**Table 3**

*Factors Labels, Descriptive Statistics, and Reliability for These Data*

<b>Factor label</b>	<b>M</b>	<b>SD</b>	<b>Skewness</b>	<b>Kurtosis</b>	<b># of items</b>	<b>Cronbach <math>\alpha</math></b>
1. Professional networking services	4.39	0.68	-2.47	8.22	9	0.92
2. Growth and advocacy services	4.14	0.71	-1.47	3.37	11	0.91
3. Professional communication services	4.06	0.74	-0.98	1.32	7	0.88
4. Ancillary discount services	2.99	1.19	0.02	-0.78	3	0.97
5. Leadership and mentoring services	3.91	0.86	-0.98	1.30	6	0.92
6. Relevant literature services	4.35	0.82	-1.97	4.93	3	0.91
7. Training and credentialing services	4.15	0.75	-1.23	1.86	3	0.72
8. Vendor and continuing education services	4.01	0.95	-0.94	0.56	2	0.88

**Descriptive Statistics Analysis**

The descriptive statistics for the 44-item instrument, including the mean, standard

deviation, and response frequencies as percentages (5 = Strongly Agree; 4 = Agree; 3 = Neither agree, nor disagree; 2 = Disagree; 1 = Strongly Disagree) as provided in the following sections to characterize each of the factors derived from the EFA. Notably, the services listed in the instrument appear to be relevant to instructional designers in higher education as only one item was below the 3.00 threshold across the 44-item survey (Access to special discounts on food and beverage services).

Professional networking services. The *Professional networking services* factor emphasized conference-related activities provided by a professional association, including providing access to relevant conferences, dissemination of conference call for proposals, and access to conference proceedings and speaker presentation files (see Table 4). Other items referenced activities and services provided at conferences (e.g., Dissemination of latest research developments) As the highest rated factor, all of the items with the exception of Dissemination of latest vendor solutions ( $M = 3.83$ ) were above the 4.0 threshold for these data. Four of the items were above 4.50: Awareness of new pedagogical developments ( $M = 4.63$ ), Awareness of new technological developments ( $M = 4.58$ ), Access to relevant conferences ( $M = 4.57$ ), and Dissemination of latest research developments ( $M = 4.55$ ).

**Table 4**

*Professional Networking Services Descriptive Statistics*

<b>Items</b>	<b>M</b>	<b>SD</b>	<b>S.D.</b>	<b>D</b>	<b>N</b>	<b>A</b>	<b>S.A.</b>
10. Access to conference proceedings	4.46	0.88	2.76	0.92	6.45	27.19	62.67
11. Access to speaker presentation files	4.34	0.89	2.30	1.38	10.14	32.26	53.92
12. Awareness of new technological developments	4.58	0.74	1.38	0.92	4.15	25.81	67.74
13. Awareness of new pedagogical developments	4.63	0.72	1.38	0.92	3.23	22.58	71.89
14. Dissemination of latest research developments	4.55	0.80	1.84	1.84	2.76	26.73	66.82
15. Dissemination of latest vendor solutions	3.83	1.05	3.23	6.45	25.81	33.18	31.34
16. Dissemination of conference call for papers (CFP)	4.30	0.93	2.30	2.30	11.52	30.41	53.46
17. Conversations with other professionals over meals or socials	4.24	0.90	2.30	1.84	11.52	38.25	46.08
19. Access to relevant conferences	4.57	0.81	2.76	0.46	2.30	26.27	68.20



Growth and advocacy services. The *Growth and advocacy services* factor included items providing growth opportunities for members (e.g., To receive professional recognition via achievement awards) and several advocacy activities (e.g., To obtain member voting rights). As the factor represented with the largest number of items (Items = 11), the *Growth and advocacy services* factor speaks to the diversity of services offered by professional associations to provide professional growth opportunities for its members (see Table 5). The instructional designers in this sample were least interested in receiving professional recognition via awards ( $M = 3.93$ ) and obtaining voting right within the association ( $M = 3.63$ ). More importantly, participants desired opportunities and services to connect with professionals with common concerns and interests ( $M = 4.31$ ), receive career advice from other professionals ( $M = 4.30$ ), and the ability to impact the profession through research and practice ( $M = 4.41$ ) provided by professional associations.

**Table 5**

*Growth and Advocacy Services Descriptive Statistics*

<b>Items</b>	<b>M</b>	<b>SD</b>	<b>S.D.</b>	<b>D</b>	<b>N</b>	<b>A</b>	<b>S.A.</b>
3. Access to employment listings in field or related fields	4.41	0.86	1.38	1.38	12.44	24.88	59.91
5. To receive career advice from other professionals (e.g., mentorship programs, networking)	4.30	0.88	1.84	1.84	11.06	35.02	50.23
6. To receive professional recognition via achievement awards	3.93	1.00	2.76	4.61	23.50	35.48	33.64
18. Access to local meetings with relevant speakers	4.24	0.96	2.30	4.61	8.76	35.02	49.31
33. To promote the profession to the general public (e.g., employers)	4.09	1.04	4.15	2.76	16.13	33.64	42.86
34. To connect with professionals who promote your concerns or interests	4.31	0.90	2.30	2.30	8.76	35.02	51.61
35. To impact the profession through research and practice	4.41	0.90	2.76	1.84	5.99	30.88	58.53
36. To receive information on latest advocacy efforts	4.16	0.97	3.23	3.23	11.52	38.71	43.32
37. To receive guidance on ethical matters	4.00	1.07	4.15	5.53	15.67	35.02	39.63
38. To receive guidance on legal matters (e.g., ADA)	4.04	1.04	2.76	6.45	15.67	34.10	41.01
39. To obtain member voting rights	3.63	1.06	5.07	5.07	35.48	30.41	23.96

Professional communication services. The *Professional communication services* factor describes many different forms for professionals to communicate and engage within and across a professional association, particularly using computer-mediated communications (see Table 6). While several of these services are below the 4.00 threshold, such as Access to social media of other professionals ( $M = 3.96$ ), Access to member directories ( $M = 3.87$ ), and Access to user groups on vendor solutions ( $M = 3.69$ ); other services were deemed more agreeable to participants in professional associations. For instance, Access to special interest groups or divisions (e.g., distance learning) ( $M = 4.26$ ), and Access to social media related to the association ( $M = 4.26$ ) tied for the highest scores in this category.

**Table 6**

*Professional Communication Services Descriptive Statistics*

Items	M	SD	S.D.	D	N	A	S.A.
20. Access to social media related to the association	4.26	0.91	1.84	1.84	14.75	31.34	50.23
21. Access to social media of other professionals	3.96	0.99	1.38	7.83	19.35	35.94	35.48
22. Access to relevant listservs	4.15	0.96	1.38	4.61	17.05	30.88	45.62
23. Access to member directories	3.87	1.07	4.15	6.91	18.89	37.33	32.26
24. Access to relevant online discussion forums	4.21	0.92	1.84	3.23	12.44	35.48	45.62
25. Access to user groups on vendor solutions	3.69	1.05	4.15	7.37	28.11	35.94	23.96
26. Access to special interest groups or divisions (e.g., distance learning)	4.26	0.86	1.84	1.84	10.60	39.63	45.62

Ancillary discount services. The results are relatively clear that the instructional designers in this sample were less interested in the *Ancillary discount services* offered by professional association (see Table 7). As the lowest scoring factor in these data, the *Ancillary discount services* represent things like: Access to special discounts on group insurance plans (e.g., car insurance), Access to special discounts on financial services, and Access to special discounts on food and beverage services. All of the items in this factor scored less than 3.50, indicating that the instructional designers are less agreeable to these professional association services.

**Table 7**

*Ancillary Discount Services Descriptive Statistics*

<b>Items</b>	<b>M</b>	<b>SD</b>	<b>S.D.</b>	<b>D</b>	<b>N</b>	<b>A</b>	<b>S.A.</b>
42. Access to special discounts on group insurance plans (e.g., car insurance)	3.03	1.23	12.90	19.82	34.10	17.97	15.21
43. Access to special discounts on financial services	3.01	1.22	13.36	19.82	33.18	19.82	13.82
44. Access to special discounts on food and beverage services	2.93	1.22	14.75	20.74	34.56	17.05	12.90

Leadership and mentoring services. The *Leadership and mentoring services* construct was measured by items relating to providing professional service in leadership positions in a professional association, and providing mentorship and sponsorship of other professionals or students within an association (see Table 8). While the overall mean for the factor was just below the 4.00 threshold at  $M = 3.91$ , some of the opportunities and services were agreeable to the instructional designers in our sample, including: To fulfill leadership positions in the association ( $M = 4.06$ ), To serve on committees, divisions, or task forces ( $M = 4.17$ ), and To mentor other professionals ( $M = 4.02$ ). Participants were less agreeable to opportunities to mentor students ( $M = 3.63$ ) or to sponsor educational programs ( $M = 3.83$ ).

**Table 8**

*Leadership and Mentoring Services Descriptive Statistics*

<b>Items</b>	<b>M</b>	<b>SD</b>	<b>S.D.</b>	<b>D</b>	<b>N</b>	<b>A</b>	<b>S.A.</b>
27. To fulfill leadership positions in the association	4.06	0.96	3.23	1.84	18.43	39.17	37.33
28. To serve on committees, divisions, or task forces	4.17	0.92	2.30	2.76	13.36	38.71	42.86
29. To serve on the board of directors	3.77	1.05	5.07	4.15	26.27	37.33	27.19
30. To mentor students	3.63	1.15	6.45	7.83	29.49	29.03	27.19
31. To mentor other professionals	4.02	1.01	3.23	3.69	19.35	35.48	38.25
32. To sponsor educational programs	3.83	1.01	3.69	3.23	29.03	34.10	29.95

Relevant literature services. As the second highest overall factor in these data, the

*Relevant literature services* factor appears to be an important facet to instructional designers desires of a professional association (see Table 9). The participants were relatively clear in their agreement with professional associations providing access to relevant literature in the form of magazines and periodicals ( $M = 4.30$ ), white papers ( $M = 4.39$ ), and journals ( $M = 4.35$ ).

**Table 9**

*Relevant Literature Services Descriptive Statistics*

<b>Items</b>	<b>M</b>	<b>SD</b>	<b>S.D.</b>	<b>D</b>	<b>N</b>	<b>A</b>	<b>S.A.</b>
7. Access to magazines and periodicals	4.30	0.88	2.30	1.84	8.76	37.33	49.77
8. Access to relevant white papers	4.39	0.87	2.30	0.92	9.22	30.88	56.68
9. Access to journals	4.35	0.94	3.69	0.46	9.22	30.88	55.76

Training and credentialing services. The instructional designers representing the higher education context in this sample are affable to professional associations providing *Training and credentialing services* (see Table 10). Notably, the participants were less interested in Access to soft skills (e.g., interviewing techniques) training opportunities ( $M = 3.90$ ); however, they did appear to desire Access to technical skills training opportunities ( $M = 4.38$ ) from professional associations. Also notable was the desire for access to licensure or professional certifications at  $M = 4.17$ .

**Table 10**

*Training and Credentialing Services Descriptive Statistics*

<b>Items</b>	<b>M</b>	<b>SD</b>	<b>S.D.</b>	<b>D</b>	<b>N</b>	<b>A</b>	<b>S.A.</b>
1. Access to technical skills training opportunities	4.38	0.83	0.92	4.15	4.61	36.87	53.46
2. Access to soft skills (e.g., interviewing techniques) training opportunities	3.90	0.96	2.30	6.91	16.59	46.54	27.65
4. Access to licensure or professional certification(s)	4.17	1.01	3.23	4.15	11.52	34.10	46.54

Vendor and continuing education services. The *Vendor and continuing education services* factor was measured by two items on the scale: Access to vendor discounts (e.g., e-learning software), and Access to special discounts on continuing

education courses (e.g. Project Management) (see Table 11). While vendor discounts ( $M = 3.85$ ) was rated less than discounts on continuing education courses ( $M = 4.17$ ), both services appear to be relevant to instructional designers expectations of professional association services.

**Table 11**

*Vendor and Continuing Education Services Descriptive Statistics*

Items	M	SD	S.D.	D	N	A	S.A.
40. Access to vendor discounts (e.g., e-learning software)	3.85	1.03	2.76	6.91	24.42	34.10	31.80
41. Access to special discounts on continuing education courses (e.g. Project Management)	4.17	0.98	2.30	3.69	16.13	30.88	47.00

**Correlation Analysis**

Table 12 provides the correlation coefficients among the items used on the IDHEPAS. As can be seen in the matrix, correlation coefficients are all relatively strong and positive, ranging from  $r = 0.27, p < .001$  (i.e., weakest correlations are with the *Ancillary discount services*) to  $r = 0.75, p < .001$  (i.e., strongest correlations are with the *Professional networking services* and *Growth and advocacy services* factors). Notably, all of the correlation coefficients were statistically significant at a .01 level. These strong and positive correlation coefficients suggest that the scale is cohesive, and perhaps, measuring the underlying multidimensional constructs well - services motivating instructional designers in higher education to engage in professional associations. This point is reinforced by the Cronbach alpha for the all items of the data being relatively high at  $\alpha = .97$ , which is well above the 0.70 social science standard (Nunnally, 1978). It would appear the factors are “hanging” together well to form a larger factor of the IDHEPAS with these data.

**Table 12**

*Correlations for the Factors on the IDHEPAS*

<b>Factors</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
1. Professional networking services	1							
2. Growth and advocacy services	.739	1						
3. Professional communication services	.708	.750	1					
4. Ancillary discount services	.295	.341	.337	1				
5. Leadership and mentoring services	.685	.763	.643	.384	1			
6. Relevant literature services	.687	.558	.549	.270	.447	1		
7. Training and credentialing services	.521	.588	.477	.360	.495	.384	1	
8. Vendor and continuing education services	.585	.602	.521	.524	.537	.498	.502	1

*Note.* All correlations were significant of the .01 level.

## Discussion

The interpretation and discussion of these results should be viewed in light of both the limitations and delimitations of this research study. As with any survey research, the quality of the information collected is a function of the honesty, backgrounds, and expertise of the professional instructional designers that responded to the survey. As every effort was made to cast a wide net of instructional design professionals working in higher education by using popular listservs (e.g., ITFORUM), alumni listservs in established academic programs (e.g., FSU), social media venues (e.g., LinkedIn), and contacting instructional designers directly via email scrapes to solicit professionals to respond to the survey, only  $N = 217$  participants ultimately completed the survey. Participation and non-response bias is certainly a consideration with these data. Generally speaking, the professionals responding to the survey were mostly female, White/Caucasian from the United States, working in the public sector, and highly educated. Indeed, the results may have varied dramatically with an international perspective or had there been more diverse individuals (e.g., race) responding to the request. Since we used listservs that have overlapping membership, we could not calculate response rates for the administration.

The IDHEPAS was modeled after a survey designed the services motivating professional association membership of computing professionals (Ritzhaupt et al., 2012). While computing fields and instructional design share much in common (e.g., Adnan & Ritzhaupt, 2018), the two fields also have several differences in professional composition and goals. Although we tailored the survey using extant literature from the field (e.g., Kumar, & Ritzhaupt, 2017; Litchfield, 2017;

Ritzhaupt, & Kumar, 2015), the original design of the survey was largely modeled from this previous work. To address this concern, we crafted a new conceptual framework (Figure 1) which was used to derive the items on the modified survey. We also had experts review the survey and conducted a formal think aloud process to validate the content of the scale. A final note is that we did not attempt to explore the differences among the instructional design participants using the demographic data we collected. Since this type of analysis was not aligned to our purpose or research question, we did not analyze the data using comparative statistical techniques (e.g., Multivariate Analysis of Variance). Even with these items noted, our results have provided some very interesting findings worth of discussion.

First, we can discuss the psychometric properties of the IDHEPAS for these data. The IDHEPAS has 44-items that formed an eight factor instrument explaining approximately 71% of the variability in these data. Specifically, the IDHEPAS measures: 1) *Professional networking services*, 2) *Growth and advocacy services*, 3) *Professional communication services*, 4) *Ancillary discount services*, 5) *Leadership and mentoring services*, 6) *Relevant literature services*, 7) *Training and credentialing services*, and 8) *Vendor and continuing education services*. The internal consistency reliability evidence demonstrates the factors are all above the 0.70 social science standard. Further, the correlations among the factors provide evidence that the IDHEPAS is measuring a multi-dimensional construct. Also notable, while the pattern matrix illustrated in the Appendix did not show a truly simple structure (e.g., items had cross-loadings), the coefficients to assign items to factors were all above 0.40. The preliminary validity and reliability evidence of the IDHEPAS for these data suggest the scale performing satisfactorily.

Given the IDHEPAS appears to be measuring the factors well, we can next discuss the findings from the first administration of the survey. The two highest rated factors were *Professional networking services* ( $M = 4.39$ ), and *Relevant literature services* ( $M = 4.35$ ). It would appear that instructional designers in higher education desire many relevant services from professional associations. Chiefly among them, instructional designers in higher education wanted access to relevant conferences along with opportunities to access the conference materials, such as conference proceedings or speaker presentation files after the formal event. At these conferences, our participants suggested that both technological and pedagogical developments are important, as well as the latest research surrounding these things. Instructional designers in our sample also wanted access to relevant literature, including journals, white papers, and magazines and periodicals. All the professional associations on our survey provide some forms of relevant literature for their members, such as *Educational Technology Research*

*and Development or Performance Improvement Quarterly*. The need for access to learning materials is further supported by the smallest factor, *Vendor and continuing education services*, being rated at  $M = 4.01$ . The evidence is clear: instructional designers in higher education are in need of professional learning opportunities from their professional associations.

Similarly, instructional designers suggested that *Growth and advocacy services* ( $M = 4.14$ ) and *Training and credentialing services* ( $M = 4.15$ ) are relevant to their professional lives. Engagement with other professionals through mentoring programs, guest speakers at local meetings, connecting with professionals with similar interests, and the overall ability to impact the profession through research and practice were highly noted. The participants also desired relevant technical, and to a lesser extent, soft skill training opportunities. Notably, the notion of professional licensure or certification was popular among the instructional designers. Looking across our professional associations in the field, the *Association for Talent Development* (ATD) offers the Certified Professional in Learning and Performance (CPLP), the *International Society for Performance Improvement* (ISPI) offers the Certified Performance Technologist (CPT), and the *International Society for Technology in Education* (ISTE) offers the newly established ISTE Certification for Educators. Notably, none of these certifications, in our judgement, are appropriate for instructional designers working in the context of higher education.

In the higher education environment, instructional design job descriptions often require a master's degree in instructional design or a related degree title, such as educational technology or learning design and technology. For instructional designers in higher education to receive further certification or credentials beyond a graduate degree in the field, they have few options from the current professional associations serving this population. Because instructional designers in higher education typically already possess a graduate degree, they often rely on their professional associations to provide additional courses, webinar, and other professional learning experiences to contribute to their professional growth and development. OLC Institute for Professional Development provides a four-course certification program for instructional designers in higher education as well as a program in project management, and research methods for instructional design professionals. However, these certification programs are not perceived as professional certifications, like CPLP or CPT programs.

The need for *Professional communication services* and *Leadership and mentoring services*, although not scored as high as some of their counterparts, were still factors agreeable to the instructional designers completing the survey. Today,



professional associations are expected to connect members both face-to-face and in virtual spaces online. Our participants indicated that these services are relevant to their profession, including such services as social media related to the professional association, listservs, online discussion forums, and the extension of special interest groups online (Donelan, 2016). Good news for these voluntary professional associations that operate almost exclusively on the voluntary service of professionals, these instructional designers are amenable to providing service to the associations in the form of leadership positions on committees, divisions, or taskforces; and to a smaller degree serving on the board of directors for the association. The participants even indicated a willingness to mentor other professionals, and to a lesser extent, students entering the profession.

The least rated factor to emerge from our data and analyses was the *Ancillary discount services* factor, which noted discount services often provided by professional associations for things like car insurance, legal representation needs, or even discounts on food and beverage. Across these eight factors, we see a theme emerge that instructional designers in higher education are in need of a professional association to provide these services, enabling them to engage with other professionals with similar interests, and access professional learning resources both in face-to-face venues, but more likely in on-demand online spaces. Also notable for professional association is that more than 50% of the participants indicated their institutions will provide either partial or fully support for professional association members.

## **Recommendations for Future Research**

The instrument and conceptual framework employed in this research can be used by other researchers to conduct research on instructional designers working in other contexts, including business and industry, K-12, medical, government, and more. Are there differences among contexts (e.g., higher education, military, government, K-12 education, etc.) or demographics traits (e.g., gender)? Also important is the way in which these factors might change over time - studying the data longitudinally. Future research can employ the IDHEPAS to study a target professional association's membership over time to detect the important changes. How do these factors change over time, and how is this relevant to professional associations? Future research efforts should also seek to collect a larger and more diverse sample of instructional designers working in higher education to provide further evidence of the validity and reliability of the IDHEPAS. Conducting the next steps in the development and validation of the IDHEPAS might include a confirmatory factor analysis to test the instrument's structure under different circumstances. As with any research, we need measures built on the existing

theory that meet the social science standards of evidence (e.g., construct validity) to accomplish our research goals. The IDHEPAS holds promise a first step toward this end.

Additional research is needed to determine how membership to professional organizations influences instructional designers' decisions in the workplace. Qualitative research, exploring specific programs and organizational offerings, is needed to ensure alignment between professional organizations and the needs of their membership. It would also be beneficial to examine organizational offerings that are not being utilized or valued by members. This would help professional organizations in their strategic planning to focus their offerings on addressing specific needs and gaps in the professional development of their members (Ritzhaupt et al., 2012).

## **Recommendation for Professional Practice**

We believe the findings of this research have a direct link to professional practice. These results are useful to professional association leaders, professionals, and to institutions of higher education. The primary professional audience of these data and findings are the leaders of professional associations reaching instructional designers in higher education. Professional association leaders should find the results particularly useful for conducting a gap analysis on the services presently offered by the professional association and the services that the association will need to offer to better meet the needs of this constituency - instructional designers in higher education (Ritzhaupt & Kumar, 2015). Further, these results can be used to plan the professional development and learning experiences for instructional designers in higher education by providing the needed services and opportunities for these professionals to engage. This form of professional development does not only have to be offered by professional associations (Garet et al., 2001; Zuber-Skerritt, 2013). Rather, the institutions of higher education can also provide these services in their organizations to develop the talent and expertise of their instructional design professionals (Larson, 2005; Tracey & Boling, 2014). Finally, professionals—instructional designers in higher education—can use the results to help select the best professional association to meet their professional development needs. Professionals can choose which professional associations to engage in for their growth and development.

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## **Appendix: Pattern Matrix**

Items	Factors							
	1	2	3	4	5	6	7	8
1. Access to technical skills training opportunities	0.438	0.425	0.358	0.254	0.374	0.297	<b>0.720</b>	0.315
2. Access to soft skills (e.g., interviewing techniques) training opportunities	0.243	0.385	0.294	0.231	0.357	0.258	<b>0.649</b>	0.243
3. Access to employment listings in field or related fields	0.386	<b>0.543</b>	0.297	0.123	0.427	0.386	0.420	0.308
4. Access to licensure or professional certification(s)	0.549	0.581	0.305	0.343	0.388	0.371	<b>0.673</b>	0.417
5. To receive career advice from other professionals (e.g., mentorship programs, networking)	0.590	<b>0.649</b>	0.476	0.154	0.573	0.455	0.513	0.244
6. To receive professional recognition via achievement awards	0.355	<b>0.442</b>	0.420	0.340	0.372	0.219	0.314	0.259
7. Access to magazines and periodicals	0.579	0.484	0.489	0.183	0.395	<b>0.850</b>	0.358	0.378
8. Access to relevant white papers	0.627	0.497	0.452	0.195	0.419	<b>0.881</b>	0.424	0.474
9. Access to journals	0.596	0.489	0.337	0.247	0.406	<b>0.864</b>	0.427	0.283
10. Access to conference proceedings	<b>0.771</b>	0.559	0.459	0.194	0.488	0.686	0.346	0.279
11. Access to speaker presentation files	<b>0.846</b>	0.625	0.517	0.233	0.547	0.628	0.403	0.347
12. Awareness of new technological developments	<b>0.834</b>	0.584	0.513	0.176	0.555	0.570	0.549	0.439
13. Awareness of new pedagogical developments	<b>0.772</b>	0.595	0.419	0.139	0.595	0.662	0.584	0.518
14. Dissemination of latest research developments	<b>0.868</b>	0.700	0.489	0.165	0.584	0.658	0.505	0.440
15. Dissemination of latest vendor solutions	<b>0.650</b>	0.379	0.509	0.428	0.393	0.291	0.363	0.314
16. Dissemination of conference call for papers (CFP)	<b>0.787</b>	0.602	0.455	0.162	0.535	0.544	0.421	0.368
17. Conversations with other professionals over meals or socials	<b>0.610</b>	0.557	0.485	0.280	0.517	0.390	0.501	0.100
18. Access to local meetings with relevant speakers	0.513	<b>0.642</b>	0.448	0.273	0.590	0.506	0.604	0.292
19. Access to relevant conferences	<b>0.763</b>	0.642	0.438	0.185	0.585	0.590	0.500	0.325
20. Access to social media related to the association	0.604	0.494	<b>0.643</b>	0.311	0.451	0.358	0.346	0.215
21. Access to social media of other professionals	0.449	0.413	<b>0.620</b>	0.472	0.419	0.365	0.302	0.181
22. Access to relevant listservs	0.417	0.507	<b>0.735</b>	0.072	0.475	0.419	0.400	0.278
23. Access to member directories	0.409	0.511	<b>0.689</b>	0.224	0.458	0.306	0.359	0.205
24. Access to relevant online discussion forums	0.569	0.649	<b>0.718</b>	0.203	0.588	0.586	0.535	0.477
25. Access to user groups on vendor solutions	0.582	0.538	<b>0.764</b>	0.345	0.475	0.401	0.469	0.498
26. Access to special interest groups or divisions (e.g., distance learning)	0.642	0.621	<b>0.741</b>	0.143	0.516	0.481	0.421	0.356
27. To fulfill leadership positions in the association	0.575	0.624	0.590	0.273	<b>0.899</b>	0.409	0.456	0.387
28. To serve on committees, divisions, or task forces	0.556	0.581	0.612	0.260	<b>0.902</b>	0.392	0.437	0.331
29. To serve on the board of directors	0.584	0.654	0.448	0.383	<b>0.818</b>	0.349	0.482	0.383
30. To mentor students	0.498	0.701	0.398	0.432	<b>0.733</b>	0.346	0.607	0.196
31. To mentor other professionals	0.606	0.731	0.465	0.338	<b>0.821</b>	0.506	0.574	0.109
32. To sponsor educational programs	0.496	0.602	0.317	0.281	<b>0.697</b>	0.424	0.520	0.248
33. To promote the profession to the general public (e.g., employers)	0.537	<b>0.785</b>	0.467	0.280	0.605	0.381	0.487	0.296
34. To connect with professionals who promote your concerns or interests	0.542	<b>0.804</b>	0.565	0.270	0.568	0.420	0.439	0.265
35. To impact the profession through research and practice	0.630	<b>0.848</b>	0.535	0.110	0.554	0.532	0.515	0.344
36. To receive information on latest advocacy efforts	0.673	<b>0.824</b>	0.602	0.214	0.608	0.490	0.507	0.485
37. To receive guidance on ethical matters	0.534	<b>0.755</b>	0.600	0.257	0.587	0.513	0.627	0.542
38. To receive guidance on legal matters (e.g., ADA)	0.495	<b>0.662</b>	0.605	0.347	0.578	0.451	0.539	0.523
39. To obtain member voting rights	0.488	<b>0.659</b>	0.499	0.429	0.529	0.336	0.471	0.345
40. Access to vendor discounts (e.g., e-learning software)	0.526	0.500	0.396	0.535	0.459	0.435	0.449	<b>0.654</b>
41. Access to special discounts on continuing education courses (e.g. Project Management)	0.566	0.580	0.436	0.419	0.512	0.472	0.552	<b>0.720</b>
42. Access to special discounts on group insurance plans (e.g., car insurance)	0.264	0.293	0.271	<b>0.925</b>	0.335	0.199	0.366	0.317
43. Access to special discounts on financial services	0.305	0.307	0.284	<b>0.959</b>	0.350	0.212	0.371	0.297
44. Access to special discounts on food and beverage services	0.270	0.321	0.310	<b>0.921</b>	0.324	0.194	0.341	0.284



# Addressing the Challenges of Program and Course Design in Higher Education with Design Technologies

Alan Bain

*This article describes six major challenges facing faculty members and teams as they engage in the design of degree programs in higher education and how technology tools for program design can be employed to address those challenges. They include tools for collaboration, leveraging best practice, designing for quality and distinctiveness, addressing standards overload, focusing on assessment, and making feedback a meaningful part of the design process. The article makes the case for each of the challenges and shows examples of how the tools help teams engage in collaborative program development in higher education.*

Learning and teaching in higher education institutions have been subject to profound change in recent decades (Henard & Roseveare, 2012). Degree offerings have migrated from being the sum of sometimes disparate parts offered up by individual faculty members to more integrated and coherent programs of study. The design of these programs and their contents are scrutinized from different perspectives including, for professional degrees, prescriptive external accreditation standards (Phillips KPA, 2017).

The effect of curriculum reform in higher education (HE) has been to transform the way programs are developed adding significant new demands to the learning and teaching roles of individual faculty members and the teams on which they serve (e.g., Pegg, 2013). This article describes six common challenges faced by faculty members and teams as they address the demands of program design and

development in HE and the role technology can play in supporting those faculty members to negotiate new expectations. For the purposes of the article and with consideration for the variability in terminology employed internationally, the term *program* when used here refers to a degree or collection of units that are combined as a qualification of some kind; the term *course* will refer to a single unit of learning within a degree or qualification.

## **Challenge 1: Making Program Design Collaborative**

The focus on whole programs as a unit of analysis (over individual courses) requires collaboration among academics in the design, development, and accreditation of degrees (Norton et al., 2013; Jones et al., 2012). A shared responsibility to ensure that programs meet standards internal and external to the institution stands in contrast to the traditional more autonomous learning and teaching culture of many higher education institutions (Zundans-Fraser, 2014; Kezar & Lester, 2009).

Existing research on collaboration in HE suggests that while academics recognize the importance of collaboration in program design, their work environments frequently lack the organizational support necessary to collaborate efficiently and effectively (Zundans-Fraser, 2014). Further, while individual faculty members may express an interest in or commitment to collaboration, they often do not have experience with the skills and knowledge required for collaborative team work (Briggs, 2007; Kezar & Lester, 2009; Zundans-Fraser & Bain, 2015; Newell & Bain, 2018). As a consequence, collaboration about program design is commonly described as forced and unproductive by members of program design teams (Newell & Bain, 2018).

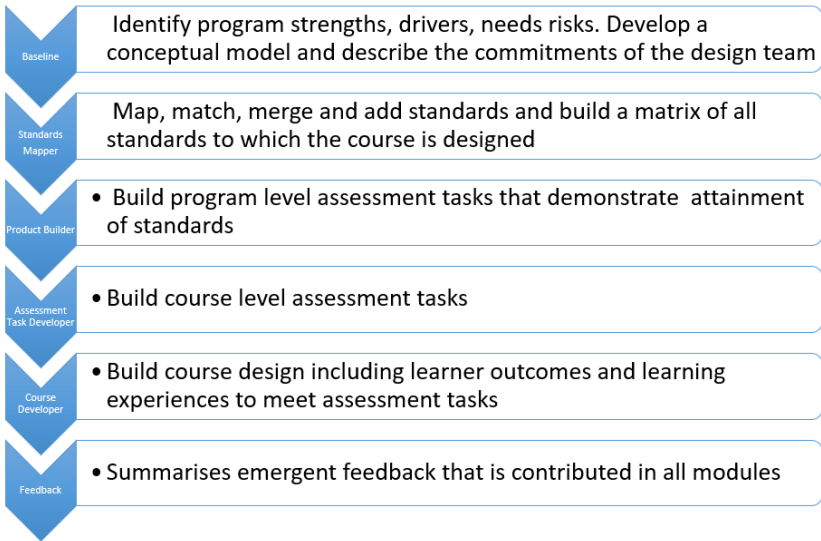
While the challenge of making institutions more collaborative is complex and multi-faceted, there is a fundamental acknowledgment in the literature that to be effective collaboration needs to assume a form that includes methods and processes to assist teams conduct meetings, manage interactions, and capture the product of their efforts (Zundans-Fraser, 2014; Ciampaglia, 2010; Stevens & Myers, 2000; Salisbury et al., 1997).

Technology can make an important contribution in this space. Platforms where teams can come together to map standards, develop assessments, design course offerings and learning experiences can provide a focus for collaboration. Figure 1 describes six modules included in a software platform for program and course

design.

## Figure 1

### *Program and Course Design Modules*



The intent of the software modules is twofold: First, to provide a collaborative work environment that gives form to the program design process. This includes, maximizing the effectiveness of meeting time by focusing on a clearly defined set of scaffolded design steps, tasks and activities and second, to ensure that the product of the collaborative process is captured in a form that builds over time and can be configured in order to report out to different stakeholders and meet institutional program approval requirements.

Team members can use the tools synchronously or asynchronously to build their programs. Each module connects to subsequent modules so that developers can see previously completed work as they engage with new design tasks. The feedback module makes possible formal and informal feedback at each step in the design process. Each of the modules described in Figure 1 are examined in more detail as they relate to the design challenges that follow.

## **Challenge Two: Focusing on Quality and Distinctiveness**

Efforts to accredit higher education institutions have as a driver the desire to both assure and improve the quality of what those institutions do (Stensaker, 2008) although that effort can also create a burden that gets in the way of program quality and distinctiveness. One finding of the KPA Phillips Australian national report on professional accreditation was the perceived negative impact of accreditation overload on program quality, diversity and faculty autonomy (Phillips KPA, 2017).

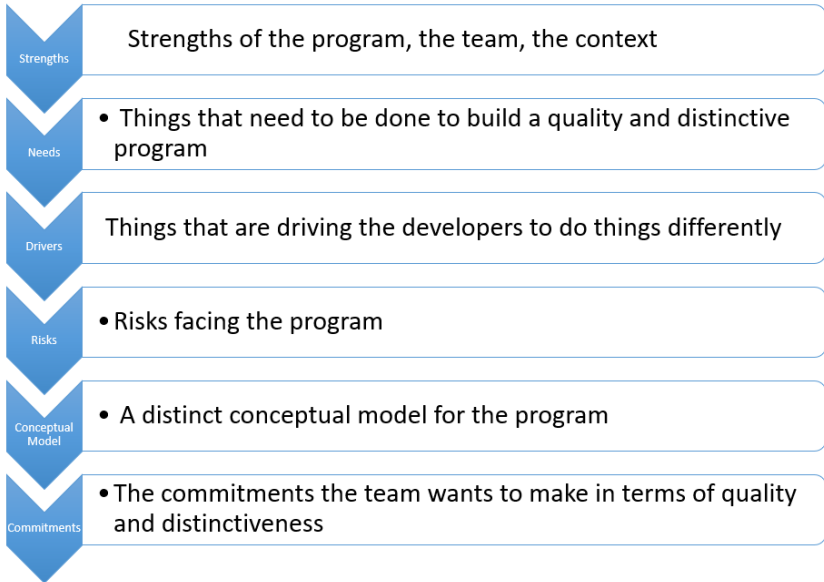
The focus on standards and accreditation has not necessarily helped institutions do a better job of determining quality or making their programs more distinctive. Massy et al. (2012) when describing the results of a US national report on higher education productivity note that the determination of quality in learning and teaching is an unresolved question in higher education and the “elephant in the room” with respect to making determinations of productivity.

Dvorak and Busted (2015) note that “the lack of enduring and unique identities in higher education offers an opportunity for education leaders, as it indicates there are a host of undifferentiated brands ripe for disruption” (p.2). Program teams and faculty members in general frequently express frustration derived from what they perceive to be a preoccupation with standards and mandatory requirements that takes time away from efforts to make their programs original and distinctive.

To reach beyond drivers for compliance and uniformity, program design teams need to consider those things they believe will endow their programs with a unique quality and distinctive identity. Figure 2 describes the inclusions in a tool that enables a program team to step through a series of baseline considerations to capture members' vision for the program; build an understanding of the context in which it will operate (e.g., strengths, needs, drivers, risks), make shared commitments, and create a conceptual model for the design. The baseline module can aggregate input and feedback from all stakeholders creating a transparent starting point for the design process.

### **Figure 2**

#### *Baseline Module*



Teams often complete the baseline process in a one-day workshop. Importantly, the product of their work is captured in a usable form within the tools. For example, Figure 3 describes a matrix from the baseline module that summarizes the identification of strengths, needs, drivers, and the risks facing a program. Selecting any of the entries on the matrix takes the user to a detailed account of that need or driver based upon the collaborative input of team members.

### Figure 3

#### *Baseline Matrix*

Drivers	Strengths	Needs	Risks
Driver 1 Why are students doing Masters?	Strength 1 Graduate Outcomes	Need 1 Research	Risk 1 Sustaining enrolments
Driver 2 The AQF	Strength 2 Inclusive model	Need 2 Responsive to rapid change	Risk 2 Competition
Driver 3 Regional Community Impact	Strength 3 Research-based program	Need 3 Marketing	Risk 3 Flexibility
Driver 4 Reputation	Strength 4 Reputation	Need 4 Flexibility & Coherence	Risk 4 Staff
Driver 5 Competition	Strength 5 National & International referencing	Need 5 Pathways	Risk 5 Not meeting student needs/interests and current capabilities
Driver 6 Student Expectations & Enrolment circumstances	Strength 6 Strong consistent enrolments	Need 6 Setting internal standards	
Driver 7 University for the Professions	Strength 7 Responsiveness	Need 7 Refocus & Refresh	
Driver 8 Capacity building & Leadership			
Driver 9 Quality Course design			
Driver 10 Research by course team			
Driver 11 Practicum Considerations			

Using the baseline module, the team can take a step back to reconcile the pragmatic considerations driving the program like market forces and policies creating a bigger picture vision and conceptual model that reflect the team members' expertise, priorities, and commitments as they engage with the design process. The result is a shared foundation for the design and development of the program. The team identifies what it wants to achieve by considering and acting upon those things that it believes can improve quality and distinctiveness.

### Challenge 3: Referencing Program Design to Educational Best Practice

A third important challenge in contemporary higher education curriculum design and development relates to the increasing role educational research and practice play in the design and implementation of HE courseware (Hattie, 2011). Increasingly, empirical research from the field of education is finding its way into policy, regulation, and the normal work expectations for program and course design in institutions. Terms like constructive alignment (Biggs & Tang, 2011), criterion based assessment (Sadler, 2005), and evidence-based pedagogy (Hattie, 2011) have become common-place in the practice lexicon of HE; in requirements for program and course approval, and in the work of Centers for Learning and Teaching Development.

Knowledge of evidence-based pedagogy, assessment principles, and educational design are frequently not within the primary experience of many academics even

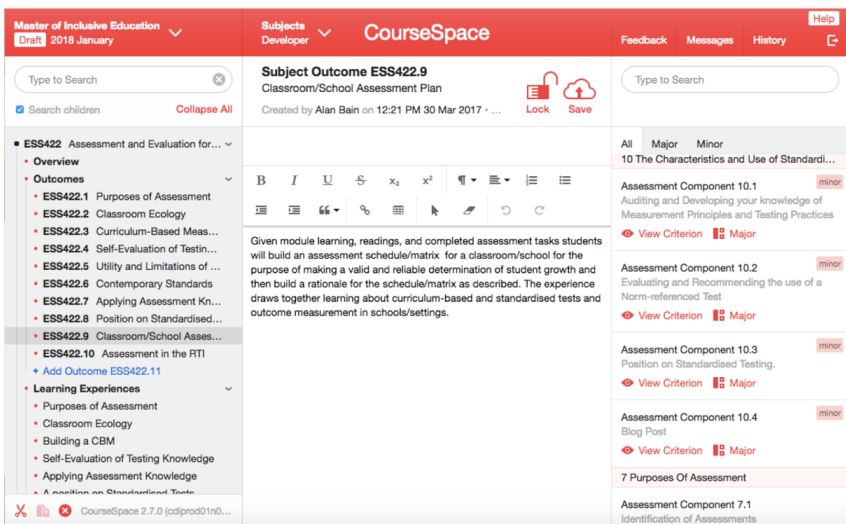
although part of their role in many institutions is to design and/or deliver courseware. The response from academics to what could be described as these best practice requirements is mixed regarding the extent to which they are taken up in their teaching (Scott & Scott, 2015).

Technology can be employed to assist with the challenge created by the need to apply evidence-based practice to program design and development by including in software tools the key features of approaches that have been shown to improve student achievement. Embedding those features in the design of relational tools used to design courseware reduces the load on faculty members as they take up the requirements to design programs and courses in ways that reflect educational research.

For example, while many academics may not know an immense amount about constructive alignment which refers to the alignment between learning experiences and assessment tasks (Biggs & Tang, 2011); it is possible to design software that highlights the relationships among design elements and make those visible as teams work to design assessment tasks, build content and develop learning experiences. Figure 4 describes a tool for developing and then aligning learner outcomes at the course level.

#### **Figure 4**

##### *Constructive Alignment*



The left hand panel of the figure is a scrolling list of learner outcomes associated with specific courses. The central panel is the work space for developing the content of those outcomes. The right hand panel is a scrolling list of the things that make up the assessment task to which the outcomes will be linked. Users can review the assessment tasks and their components as they develop the content of the outcomes. This ensures that course outcomes are directly referenced to assessment tasks which as described previously are linked to higher level program expectations (e.g., standards). A newly developed outcome is linked by the user to specific components of the assessment task by clicking on the term major (designating that the outcome is a major connection to a part of the assessment task) or a minor connection which means that the outcome is partially connected to the assessment task. Users build coherence across the elements of a program and identify gaps and discontinuities as they go about the design and development process.

In this way, the tools assist faculty members make decisions about constructive alignment as they engage in the normal work of building outcomes, assessment tasks etc. Users can become proficient at the practice of constructive alignment without having extensive prerequisite knowledge or learning about the construct. In this way, an important feature of educational research is embedded in the software to support transactions related to a best practice.

The example described in this article can be extended to the design of templates



for using different teaching approaches and in the development of assessment tasks. An additional example of designing for research-based practice related to assessment is described subsequently in response to challenge five.

## **Challenge Four: Standards Overload**

The proliferation of sector, professional, and internal standards represent an immense challenge for higher education institutions. They can be subject to over 100 different sets of professional standards (Dodd, 2017) resulting in an immense burden in terms of cost and workload that impacts the academic culture of institutions. Phillips KPA (2017) describes the work associated with meeting standards as expensive, frequently excessive, unreasonable and burdensome as a consequence. The many agencies and standards internal and external to institutions exert immense power given the potential consequences for failure to meet accreditation expectations (Phillips KPA, 2017) or comply with in-house program approval requirements.

In practical terms, program design teams face the complex challenge of finding ways to effectively map and then meet multiple sector, professional, and internal institutional standards in a single degree program. These standards are frequently diverse in their purpose and degree of focus; are often semantically incongruent, and represent a complex matrix of stakeholder interests. Teams have to make meaning of those standards in the design of a degree program under circumstances where they face their own constraints including time (i.e., the length of a degree) and other institutional requirements that may adversely influence overall scope and sequence (e.g., delivery mode, admission requirements, credit packaging, prerequisite learning, allocation of adequate faculty workload to program design etc.). Figure 5 describes a layout from a tool that enables team members to map multiple sets of standards looking for connections across sector, professional and institutional expectations in order to build a term of reference for the design of a program.

### **Figure 5**

*Standards Matrix*

Master of Inclusive Education Draft 2018 January		Integrated Standards Matrix		CourseSpace		Feedback	Messages	History	Help
Type to Search		<b>Integrated Standards Matrix</b> Viewing connections with Secondary Standards		Primary Merged Matched		Export			
<input checked="" type="checkbox"/> Primary: Inclusive Education Standards <input checked="" type="checkbox"/> AITSL: Highly Accomplished teachers <input type="checkbox"/> AQF Level Nine Masters Degree (Course... <input type="checkbox"/> AQF Specification for the Masters Degre...		<b>Integrated Criterion</b> <b>Section 1 Learner Development and Individual Learning Differences</b> <b>Criterion 1.1</b> Inclusive educators understand how diverse learning needs may interact with development and learning and use this knowledge to provide meaningful and challenging learning experiences for individuals with diverse learning needs.		<b>Inclusive Education Standards</b> Primary imported from MIE 1.1 Inclusive educators understand how diverse learning needs may interact with development and learning and use this knowledge to provide meaningful and challenging learning experiences for individuals with diverse learning needs.		<b>AITSL: Highly Accomplished teachers</b> Matched with NGT-HA 1.1 Physical, social and intellectual development and characteristics of students Matched with NGT-HA 1.2 Understand how students learn			
		<b>Criterion 1.2</b> Inclusive educators use understanding of development and individual differences to respond to the needs of individuals with diverse learning needs.		Primary imported from MIE 1.2 Inclusive educators use understanding of development and individual differences to respond to the needs of individuals with diverse learning needs.		Matched with NGT-HA 1.1 Physical, social and intellectual development and characteristics of students Matched with NGT-HA 1.2 Understand how students learn			
		<b>Section 2 Curricular Content Knowledge</b> <b>Criterion 2.1</b> Inclusive educators use their knowledge of general and specialised curricula to improve programs, supports and services at classroom, school, community, and system levels.		Primary imported from MIE 2.1 Inclusive educators use their knowledge of general and specialised curricula to improve programs, supports and services at classroom, school, community, and system levels.		Matched with NGT-HA 2.1 Content and teaching strategies of the teaching area Matched with NGT-HA 2.3 Curriculum, assessment and reporting Matched with NGT-HA 4.3 Manage challenging behaviour			

The mapper produces a matrix that retains the integrity of the original standards, showing matches across individual standards and merges where the content of two or more standards are merged producing a set of integrated standards for designing the program. In the example, two sets of standards, one international for preparing inclusive education teachers are integrated with a more general set of national teaching standards. In this instance, the developers looked for similarities across the two standards where they could be matched or merged or a new standard added. Notably, the source standard is retained in the map, so that all design and development can be linked back to the originating standards.

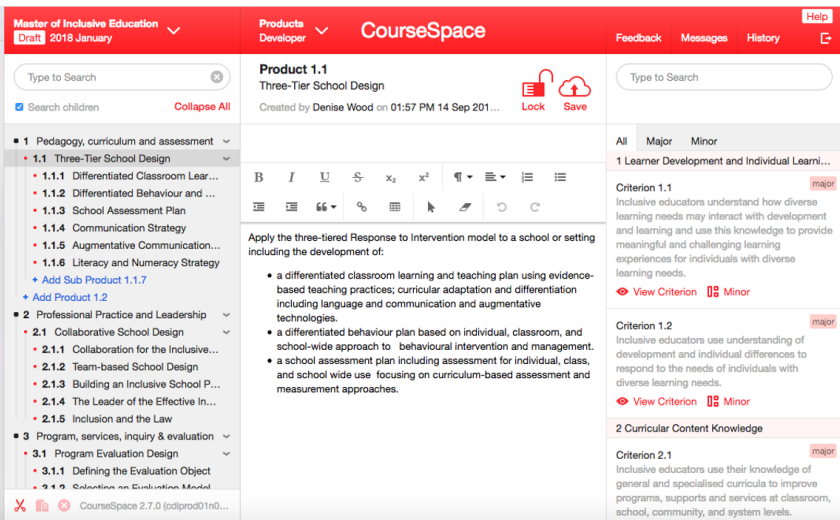
## Challenge Five: Making Student Performance the Focus

An additional important feature of the software described here is the way standards are mapped to program level assessment tasks called products. These products represent the knowledge and skills students should be able to demonstrate on graduation. An assumption underpinning the approach is that effective mapping requires program teams to think specifically about how students will demonstrate competence in program requirements upon graduation over the more traditional method of matching standards with intended learning outcomes at the course level. The former requires mapping standards to program level authentic assessment tasks and then showing how those high level tasks will be met in individual courses. This involves designing a program that assures students

are competent in the key professional requirements articulated in professional standards as opposed to finding syntactic and semantic congruity by matching the text of terms in standards documents to learning intentions at the course syllabus level. The latter produces congruence in accreditation documents and submissions although often lacks substantive meaning and an adequate level of assurance that standards will be addressed and met by students. By way of contrast, mapping to program level assessment expectations drives a level of granularity in thinking and design that is more likely to produce genuine alignment between standards and program level graduation outcomes. To take up assessment at the program level, requires developers to make a clear account of what students demonstrate on graduation at the level of the program as well as the individual course. Figure 6 describes a tool for developing program level assessment products.

**Figure 6**

*Product Developer*



The right hand panel of the layout is a scrolling list view of the standards to be met. The center panel is a work space for developing program level assessment tasks (i.e., products) that are then matched to the standards. In the example, students are required (as a program level element) to build a school design that is responsive to individual difference. The bulleted items describe the elements or

inclusions for that product. Those bulleted elements are then built out as assessment tasks in individual courses. In this way, program level authentic assessment expectations are instantiated at the course level in a cascaded mapping process that connects standards to products that are then developed as assessment tasks at the course level.

Over the last decade, higher education institutions have moved progressively from normative assessment approaches (judging students based on inter-individual comparison) to models that are criterion-based where student performance is judged against predetermined performance criteria (O'Donovan et al., 2010). The uptake of criterion-based assessment brings its own set of challenges related to the identification and alignment of criteria with standards and in the development of valid evaluation criteria, often in the form of rubrics used to judge the extent to which students have met those criteria. One of the biggest challenges in rubric development is describing grading criteria in language that students understand while also making clear evaluable distinctions among performance levels on the task. Figure 7 describes a tool for building a criterion-based assessment task that assists a team to align learner outcomes and learning experiences with criteria for determining successful performance.

**Figure 7**

*Assessment Task Rubric*

Assessment Component	High Distinction	Distinction	Credit	Pass	Fail
<b>Assessment Criterion 3.1</b> CL Lesson Development	The lesson includes all components and distinction level requirements and represents a strong Jigsaw II sequence that will ensure students meet the learner outcome. The lesson integrates content and pedagogy in a highly original way meaning that content and elements of Jigsaw II are used to leverage each other in a strong and creative representation of both evidence-based dimensions of CL and content. The elements are hard to	The lesson includes all components and credit level requirements and represents a strong Jigsaw II sequence that will ensure students meet the learner outcome. The lesson is well sequenced and thoughtfully integrates content and pedagogy meaning that not only is the lesson a strong representation of the evidence-based dimensions of CL, but those elements have been thoughtfully and creatively reconciled	The lesson includes a complete representation of all of the key design components of Jigsaw II and represents a strong and complete sequence and for achieving the learner outcome. The lesson includes a complete all of the key evidence-based design features fully explicated to maximise their achievement effects. There is also a clear and well thought out relationship across the elements and in	The lesson includes an accurate representation of all of the key design components of Jigsaw II and represents a viable basic sequence for achieving the learner outcome. The lesson shows all of the key evidence-based design features although they may not be fully explicated or represented in a way that maximises their effects (e.g., the design of the roles may not fully maximise interdependence, or	The lesson does not adequately represented all the key design components of Jigsaw II and does not represent a basic sequence for achieving the learner outcome. The lesson shows limited evidence of all of the key evidence-based design features which are inadequately explicated or represented in a way that is not likely to realise their effects.

Users can retrieve the learner outcome for the course and look at it while

developing the criteria for the rubric ensuring that the different levels of performance are sufficiently differentiated and connected to the intended learning.

## **Challenge 6: Producing and Using Meaningful Feedback.**

Higher education institutions experience great difficulty generating the kind of feedback that is useful for quality improvement in learning and teaching. According to Massy, Sullivan, and Mackie (2012) while current and prospective learning and engagement measures are useful in particular contexts, they cannot be brought together into comprehensive, robust, indices for quality adjustment. (p. 6). One reason for this difficulty is the inability to clearly explicate the work process of course design by employing factors known to positively influence learning and student achievement (i.e., what we know about assessment, constructive alignment, teaching approaches etc.). An outcome of this lack of professional control (Bowker & Star, 2000) is the tendency to defer to after-the-fact checklists and surveys that focus more on whether things in the development process happened over the quality of the work and whether known achievement-related characteristics are present in the design elements (i.e., quality of a rubric, quality of learner outcomes etc.). When the work process is explicated to include functionality that relates to known achievement-related practice, feedback can focus on the presence/absence of those characteristics.

As noted previously, a feature of the technologies described here is the way best practice assumptions about, the alignment of program elements, mapping standards, assessment, the description of learning experiences etc., are embedded and integrated in the design of the tools. This helps make visible and comparable (Bowker & Star, 2000) the key elements and features of the program design process. Explicating these features offers up the opportunity for a more focused approach to feedback. It becomes possible to make those same key elements and features priorities in the way feedback is represented and shared. For example, Figure 8 describes the questions used to provide feedback about a criterion-based assessment task.

### **Figure 8**

#### *Feedback Questions*

## Feedback

Round Started 20 Mar, 2018



2. The assessable components are described in language that students would be able to understand

4:18 PM 22 Mar, 2018

- Strongly Disagree
- Disagree
- Somewhat Disagree
- Somewhat Agree
- Agree
- Strongly Agree

3. The assessable components are aligned with the course products

Select an opinion to provide feedback

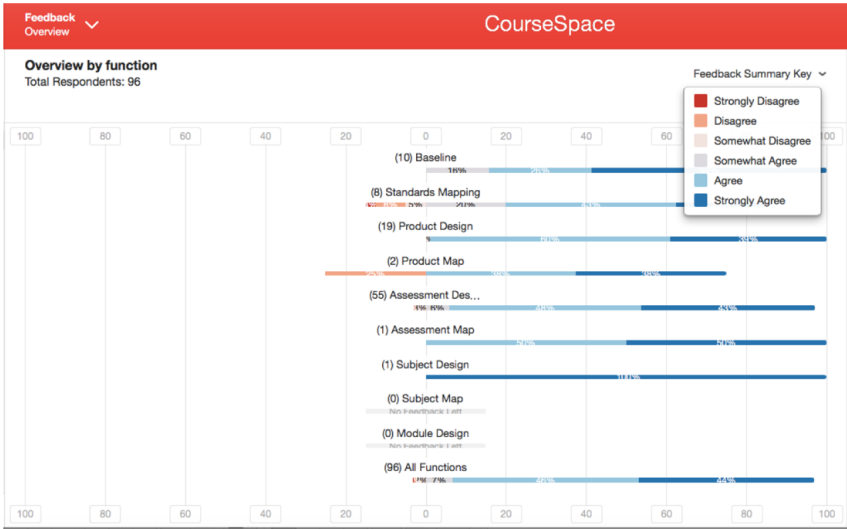
- Strongly Disagree
- Disagree
- Somewhat Disagree
- Somewhat Agree
- Agree
- Strongly Agree

The questions described in the figure pertain to known features of effective criterion-based assessment and provide users with an opportunity to make a rating and provide a comment about factors known to relate to the quality of the design of assessments by a program or course team. The feedback statements help to shape the way developers both engage with and respond to the development of a criterion-based assessment task. Those charged with the responsibility for evaluating programs can use the feedback statements to make workable distinctions (Drengenberg & Bain, 2016) in program quality meaning they can employ feedback to make decisions about quality that are referenced to factors known to produce better learning outcomes.

Figure 9 describes how feedback from many stakeholders (96 in this case) can be summarised to show an overall level of satisfaction with the work. This layout also aggregates comments from the stakeholders. The coloured bars show the proportion of responses in different categories that relate to the quality of the design giving a high level picture of the perceptions of many respondents about different features of the program.

**Figure 9**

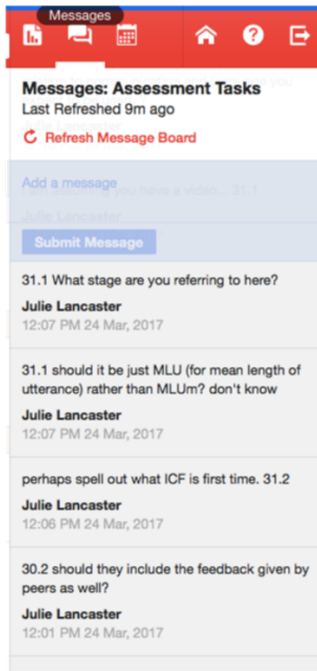
*Feedback Summary*



Team members can also provide more formative conversational feedback using the tools. Figure 10 describes commentary from a team member who has been asked to provide some formative feedback about progress in the development of an assessment task. This feedback tool allows members of a team to share perspectives as they work and before their effort is subject to summative approval by members of the team and others.

**Figure 10**

*Informal Feedback*



The approach described here is known emergent feedback (Bain, 2007; Bain & Weston, 2012; Bain & Zundans-Fraser, 2017) where feedback on key evidence-related features emerges from the ongoing work process in a continuous cycle. Feedback is available for every module of the tools and when configured this way becomes an integral part of program development. The program team can share perspectives, and identify strengths and needs throughout the design process instead of waiting for a formative or summative judgment at a waypoint or when the design is deemed to be complete.

This feedback approach has important implications for learning analytics. Because the feedback tools focus on factors known to influence student learning, the big data produced by the tools (i.e., the data aggregated across an institution's programs) focuses the learning analytics process on achievement-related analytics. This stands in contrast to existing approaches to learning analytics which focus on correlates of learning like user presence and navigation patterns, downloads etc., mainly used retrospectively to provide feedback about programs and courses and those responsible for them.



## Conclusion

The tools described here known collectively as the CourseSpace® (Bain, 2012) have been in use over a period of six years to successfully develop degree programs at the graduate and undergraduate levels in teacher education, agriculture and engineering among others. When used as a shared institution-wide platform, the tools can assist an organization to bring better program design to scale by creating a common term of reference for learning and teaching design across faculties and schools. Further, where program and course design is undertaken by specific entities within institutions, the tools are equally useful as a common platform for experienced developers who may bring additional design expertise to the task.

Work using the tools is producing an emergent body of literature describing a range of applications in collaborative course design (Thomson et al., 2018) in online program development in speech therapy (McCormack et al., 2014); embedding indigenous content, (Zundans-Fraser et al., 2018), and in integrating engineering standards (Morgan et al., 2017).

In concluding, it is important to avoid the trap of positioning technology as a silver bullet solution to the challenges of better program design and development in higher education. Technology can make an important contribution as part of broader strategic initiatives to improve the quality of learning and teaching in higher education institutions. However, as noted in the discussion of collaboration, making an institution more collaborative, more responsive to better practice, or better at assessment also involves broader planned change. This includes policy development and refinement, organizational design, the ways faculty are recognized and rewarded, as well as extensive professional capacity building.

Importantly, and as illustrated throughout, technology can make many of the strategic and tactical intentions practical and accessible by instantiating better practice and shaping the way normal work in program design is conducted. This involves maintaining an ongoing record of that work and generating feedback that makes the effort more transparent, efficient, effective, and accreditation ready. The tools briefly described here provide one example of the way technology can help address the challenges facing academics as they navigate changing expectations associated with learning and teaching in higher education.

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# **An Exploratory Study Examining Instructional Decisions and Strategies and Ethics in Social Work Education**

Tina Souders & Jill Stefaniak

*Social workers make difficult decisions every day and must do so in keeping with professional ethical standards. This exploratory study examined the types of instructional strategies used to teach social work ethics and ethical decision-making along with the topics of ethics instruction. Using a mixed-methods approach, social work students, educators, and practitioners identified instructional strategies and ethics related topics addressed in social work education. Respondents identified lectures and analysis of ethical dilemmas as the top two instructional strategies. Common ethics related topics among all respondents included boundaries/dual relationships, confidentiality and privacy, as well as sexual relationships with clients. Likewise, respondents indicated confidence in their ability to identify and respond to ethics related issues in practice. Only a minority of respondents indicated that previous training or education was used as a resource to resolve ethical dilemmas. Topics related to social media, technology, and challenges dealing with employers and colleagues were lacking from ethics instruction. Ethics education should include a variety of proven instructional strategies to ensure social workers have the requisite skill and knowledge to resolve ethical dilemmas in practice. Moreover, the complexity of ethical issues and topics of instruction should reflect the nuances of contemporary practice. More research is needed to explore instructional strategies such as think aloud protocols to analyze how social workers resolve ethical dilemmas.*

Professional social workers make critical decisions that have a significant impact on the lives of individuals and families. On any given day, social workers may have to determine whether sufficient evidence of abuse exists such that a child should be removed from the home or whether a teenager who posts a comment on Facebook about harming himself rises to the level of hospitalization. Often, there is not an obvious right or wrong answer to these problems. By definition, these types of problems are considered ill-structured, in that no single, correct solution can be arrived at but rather several possible solutions must be evaluated based on the context of their application (Jonassen, 1997).

Ill-structured problems closely resemble problems encountered in real life due to vague goals, unknown problem elements, and no clear path to the solution (Jonassen, 2011). As is often the case in social work practice, professionals encounter complex situations and must choose between several possible options without knowing the outcome of those choices. Therefore, it is imperative that social work students, and practitioners alike, are able to effectively resolve ill-structured problems and ethical dilemmas as these types of problems are present throughout their professional careers.

Empirical evidence for designing instruction that addresses ill-structured problems and ethical dilemmas exists on many levels. From models and frameworks to specific instructional strategies, the literature provides numerous, proven options for educators to use when teaching ethics and ethical decision-making. However, practice settings are changing and technology is evolving, which presents new ethical challenges for social workers. Ethics instruction should be designed to address these novel situations and provide social workers with the tools needed to resolve these complex dilemmas. This study adds to the emerging literature base regarding instructional strategies and topics currently being used to teach ethics and ethical decision making.

## **Literature Review**

Empirical research in social work focuses primarily on intervention strategies for working with individuals, families, and communities, rather than instructional strategies. Moreover, social work scholars have only recently begun conducting research related to ethics and ethical decision-making. Thus, the convergence of research related to ethical decision-making and instructional strategies in the social work literature is growing, but limited. This exploratory study was conducted to identify the types of instructional strategies currently being used to teach social work ethics and ethical decision-making, along with the specific topics of instruction in social work ethics education.

## **Instructional Strategies Used to Teach Ethical Decision Making**

Vignettes or case studies are the most common activities used to reinforce ethical thinking and behavior. Ringel and Mishna (2007) used vignettes focused on giving and receiving gifts, relationships with clients during treatment, and contact with clients after terminating services to review ethical guidelines in a classroom environment. Fossen et al. (2014) used case examples from various settings such as a domestic violence shelter, child protective services investigation, and a community mental health center to illustrate the steps in the ethical decision-making process. Continuing education providers in medical social work used case studies to illustrate ethical concepts, such as patient autonomy and capacity, and to stimulate discussion among training participants (McCormick et al., 2014). Dodd and Jansson (2004) used case examples from a hospital setting as a teaching tool to highlight the need for ensuring that patient and client needs are represented in ethical deliberations.

While case vignettes are often used when teaching social work ethics, very few experimental studies in social work have explored the effectiveness of this approach. One such study used case vignettes to evaluate child protection social workers' decision-making process (Stokes & Schmidt, 2012). The researchers concluded that while risk assessment tools can inform decision-making, social workers also relied on relationships and experience during the decision-making process (Stokes & Schmidt, 2012).

By far, the primary emphasis in the social work literature related to teaching social work ethics or ethical decision-making focuses on conceptual or theoretical models along with examples of ethical situations. Some authors have proposed ethical decision-making models with catchy acronyms such as ETHIC which stands for Examine, Think, Hypothesize, Identify, and Consult (Congress, 2000) and ETHICS-A which adds Select/ Support and Advocate to the ETHIC model (Fossen et al., 2014) as a way to reinforce core ethical decision-making concepts and scaffold learning activities. Still others have proposed conceptual frameworks for teaching ethical behavior and decision-making such as the Top 5 Ethical Lessons approach (Castro-Atwater & Hohnbaum, 2015), the application of a common morality focusing on what one should not do (Bryan, 2006), and an ethical genogram that explores family of origin issues that impact ethical decision-making (Peluso, 2003).

A variety of instructional approaches can be found in the literature regarding the design and sequencing of ethics education. For example, Fossen et al. (2014) taught ethical decision-making to undergraduate social work students by infusing



readings, short lectures, small group case studies, and discussions throughout the curriculum. Conversely, Edwards and Addae (2015) developed a stand-alone, web-based elective course on rural social work practice for undergraduate students that included ethical scenarios and the application of ethical standards using an ethical decision-making model. Similarly, Gray and Gibbons (2007) developed a five-week learning unit on ethical decision-making, with an emphasis on values and ethics, rather than frameworks for logical decision-making. Boland-Prom and Anderson (2005) approached teaching ethical decision-making by using dual relationship principles to evaluate complex ethical situations and apply the National Association of Social Workers (NASW) Code of Ethics. Osmo and Landau (2001) asserted that teaching students the value of explicit argumentation in ethical decision-making would better prepare students to justify ethical decisions in practice. More recently, Groessel (2015) conceptualized a social work course that used problem based learning, reflective thinking, and the application of the ETHIC model to teach ethics in a master's level social work program.

## **Ethics topics in social work education and practice**

Several exploratory studies have been conducted to identify the types of ethical issues encountered in social work practice and how those issues were resolved. Dodd (2007) distributed a survey at a Council on Social Work Education (CSWE) accredited Master of Social Work (MSW) program to examine the ethical issues students experience in their field placements. The results were examined using the NASW Code of Ethics as a frame of reference, categorizing the identified ethical issues by ethical construct (such as beneficence or autonomy) and by context (such as setting or relationship). The study yielded interesting information about the variety of ethical issues students experience in field placements, including confidentiality, reporting incompetence, and client self-determination. The author noted that more research was needed to test ethics teaching strategies so that students are prepared for ethical practice in field placements and throughout their careers.

Gough and Spencer (2014) conducted a similar exploratory study designed to examine ethical situations experienced by social workers in Canada. The survey also investigated conflicts with personal values, the use of ethical standards to address conflicts, and the decision-making processes used to resolve dilemmas. The results of the study provided valuable information regarding how social work practitioners resolved ethical issues in practice. A vast majority of respondents used a non-formal approach, such as a caring attitude, intuition, or consultation, to resolve the ethical issue. The authors suggested that acknowledging personal beliefs and values was critical to resolving ethical issues and there was a need for

continuing education to improve the ethical decision-making processes.

Reamer (2012) argued that ethics education should include specific topics such as client rights, confidentiality and privacy, informed consent, service delivery, conflicts of interest, documentation, defamation of character, supervision, referrals, fraud, practitioner impairment, and termination of services. Similarly, Pawlukewicz and Ondrus (2013) explored six common ethical topics including gifts/solicitation, boundaries/dual relationships, safety, client rights/confidentiality, self-awareness, and duty to warn using a survey containing 25 ethical scenarios.

As a profession, social work educators and continuing education professionals are eager to identify the most effective techniques to teach ethics and ethical decision-making while attending to relevant issues that social workers confront in practice settings. Ongoing research is needed to ensure social workers are prepared to address current ethical challenges in practice settings. Likewise, more research is needed to explore effective instructional strategies for teaching ethics content and ethical decision-making. Instructional strategies should be consistent with best practices and topics of ethics instruction should be relevant to all types of social work practice in the 21st century.

## **Purpose of the Study**

Given the strong emphasis on ethics education by CSWE during social work professional education and continued education requirements for licensure post-MSW, it is critical that students and practitioners are adequately prepared to address the complex ethical issues presented in professional social work practice. The purpose of this exploratory study was to gain a better understanding of the instructional strategies used to teach social work ethics and the topics of ethics instruction currently being used in social work education and professional development.

The following research questions guided this study:

1. What types of instructional strategies are being used to teach social work ethics?
2. What types of ethics related topics are being addressed in social work education and professional development?

# Methods

## Research Design

This exploratory study utilized a mixed-methods approach for investigating the research questions. An online survey solicited quantitative data related to instructional strategies and ethics topics in social work education. Semi-structured interviews, with a small sub-group of respondents, were used to collect qualitative data to explore innovative instructional strategies and unique ethical dilemmas encountered in social work practice settings.

## Participants

Participants in this exploratory study were primarily social work students, educators, and practitioners in North Carolina (n = 112). Participants included social work students (29.4%), social work educators (19.6%), and social work practitioners (51%). As a group, respondents were predominantly female (87.2%), white (84.4%) and between 36-45 years old (31.8%). Most respondents had a MSW degree (70%) and almost 73% of respondents were working in the social work field (see Table 1).

### Table 1

*Participant Demographics*

<b>Demographic</b>	<b>n</b>	<b>%</b>
Gender		
Male	11	10.0
Female	96	87.2
Transgender	1	0.9
Cis-Female	2	1.8
Affiliation with social work profession		
Student	30	29.4
Educator	20	19.6
Practitioner	52	51.0
Age range		
18-25	12	10.9
26-35	16	14.5
36-45	35	31.8
46-55	24	21.8
46-65	19	17.2
Over 65	4	3.6
Ethnicity		
Black/African American	9	8.2
White/Caucasian (Non-Hispanic)	92	84.4
Hispanic/Latino	4	3.7
Asian/Pacific Islander	1	0.9
American Indian	1	0.9
Other	2	1.8
Currently employed in social work field		
Yes	74	72.5
No	28	27.5
Number of years post-graduation social work experience		
0-5 years	44	42.3
6-10 years	10	9.6
11-15 years	18	17.3
16-20 years	9	5.8
21-25 years	6	5.8
Over 25 years	17	16.4
Type of degree		
BSW (or currently enrolled in BSW)	13	11.8
MSW	77	70.0
DSW	0	0
PhD	1	0.9
Other	19	17.2

Most respondents had less than 5 years' post-graduation experience (42.3%) and over half graduated from an accredited social work program in North Carolina (57%). A wide range of practice experience was represented including mental health (32%), social work education (22%), hospital (20%), government (8%), child welfare (4%), substance use (3%), aging (3%), hospice (1%), community organizing (1%), and school social work (1%).

## Procedures

No standardized instrument was available to survey social workers about the types of instructional strategies used to teach social work ethics or the topics of ethics instruction, therefore two instruments were created for this exploratory study. The first instrument, a 39-item web-based survey, was developed and administered using Qualtrics software. The second instrument consisted of a seven question, semi-structured interview that was conducted over the phone. A human subjects research review board and the National Association of Social Workers (NASW) approved the survey and interview instruments prior to distribution and data collection. The survey link was distributed electronically to all active members of the North Carolina (NC) Chapter of NASW through the NC Chapter office email titled *EnewSWire* in August, 2016. The survey link was distributed a second time, two weeks later, and was posted on various social media networks of the co-investigator such as Facebook and LinkedIn.

## Data Collection

### Online survey instrument

The web-based survey instrument contained 39 items designed to assess participant demographics, strategies or methods used to teach social work ethics, topics of ethics instruction, and resources used to resolve ethical dilemmas in practice. Likert-type questions as well as open-ended questions were used to solicit participants' beliefs and experiences with social work ethics education and training.

The online survey consisted of four sections. The first section addressed basic demographic data (e.g. age, gender, and race) along with more specific questions related to participants' involvement in social work. Additional questions included the highest social work degree earned, college/university attended, length of practice experience, primary work setting, and attendance at ethics related training or continuing education in the previous 12 months. The second section focused on the types of strategies or methods used to teach social work ethics, the topics of ethics instruction, goals of ethics education, and resources used to resolve ethical dilemmas in practice. A review of the social work literature was used to generate the list of instructional strategies. The topics of ethics instruction were drawn from the NASW Code of Ethics. The third section contained twenty-one questions, using a five-item Likert scale of (1) strongly agree, (2) agree, (3) neutral, (4) disagree, (5) strongly disagree, to identify agreement with statements related to ethics education and practice, teaching approaches, and strategies for

solving ethical problems. The Likert scale items were developed to assess viewpoints about current ethics training and education. The fourth section contained open-ended questions related to creative or innovative strategies for teaching ethics and unique ethical dilemmas encountered in practice, as well as an option to indicate willingness to participate in a brief follow-up interview. The online survey instrument was pilot tested with a small group of social work faculty, students, and practitioners. Feedback from the pilot test was used to enhance the survey instructions and ensure ethics concepts were properly construed.

### **Semi-structured interview**

The second instrument was a brief, semi-structured interview, which was conducted by phone. Respondents to the online survey interested in taking part in the interview were contacted by the co-investigator. The interview consisted of seven questions related to creative and innovative approaches to teaching ethics as well as unique ethical dilemmas encountered in professional practice. Respondents described creative or innovative approaches to teaching ethics or ethical decision-making and what aspects of the approach contributed to their ability to resolve ethical dilemmas. Interviewees shared their opinions regarding how closely the ethical dilemmas used in teaching and training represented the types of dilemmas encountered in practice. Finally, participants provided an example of an ethical dilemma encountered in practice that was not addressed in ethics related education or training. Responses to the semi-structured interview were summarized by the co-investigator and emailed to participants for review and approval. Responses were independently coded by the authors. Codes originated from the interview responses and inductive thematic analysis was used to identify themes within the data.

## **Results**

### **Survey**

The results were analyzed with respect to the two research questions: (1) the types of instructional strategies used to teach social work ethics and (2) topics of ethics instruction. The survey also assessed resources used to resolve ethical issues and the goals of ethics training and education.

### **Instructional strategies**

Multiple instructional strategies to teach social work ethics were identified. The most frequently cited instructional strategy was lecture (73.9%), followed by an

analysis of ethical dilemmas (65.2%), readings (63%), and discussions (large group 60.9% and small group 57.6%). Half of the respondents indicated that guest speakers and/or a panel of experts were used to teach ethics. Less commonly used instructional strategies were roleplays (21%), experiential exercises such as art, drawing, and games (16%), observation (13%), and popular media videos (13%) (see Table 2). For most strategies, responses between respondent types were congruent, however, students reported the development of professional forms (43.5%) and observation (30.4%) at higher percentages than educators (5% and 0%) or practitioners (27.1% and 10.4%) (see Table 3). A clear majority of respondents agreed that the instructional strategies used in coursework (73.2%) and continuing education (81.4%) were appropriate. Nearly 80% of respondents agreed that realistic and relevant examples were used in ethics related training and education.

**Table 2**

*Types of Instructional Strategies or Methods Used to Teach Social Work Ethics*

Instructional strategy or method	n	%
Lecture	68	73.9
Analysis of ethical dilemma/vignettes	60	65.2
Readings (journal articles, books, or other literature)	58	63.0
Large group discussion	56	60.9
Small group discussion	53	57.6
Guest speakers and /or panel of experts	46	50.0
Self-assessments	35	38.0
Educational videos	29	31.5
Development of practice forms (e.g. informed consent document)	24	26.1
Debates	23	25.0
Role plays	20	21.7
Experiential exercises (e.g. art, drawing, games)	15	16.3
Student presentations (individual or group)	14	15.2
Popular media videos	12	13.0
Observation	12	13.0
Other	9	9.8

**Table 3**

*Types of Instructional Strategies or Methods Used to Teach Social Work Ethics by Respondents*

Instructional strategy by respondent type	Student		Educator		Practitioner	
	n	%	n	%	n	%
Lecture	19	82.6	16	80.0	33	68.7
Analysis of ethical dilemma/vignettes	15	65.2	11	55.0	33	68.7
Readings (journal articles, books, other literature)	16	69.5	14	70.0	28	58.3
Large group discussion	14	60.9	12	60.0	30	62.5
Small group discussion	14	60.9	12	60.0	27	56.2
Guest speakers and /or panel of experts	13	56.5	7	35.0	26	54.2
Self-assessments	11	47.8	5	25.0	19	39.6
Educational videos	9	39.1	2	10.0	18	37.5
Development of practice forms	10	43.5	1	5.0	13	27.1
Debates	8	34.7	4	20.0	11	22.9
Role plays	5	21.7	3	15.0	12	25.0
Experiential exercises (e.g. art, drawing, games)	7	30.4	3	15.0	5	10.4
Student presentations (individual or group)	6	26.1	0	0.0	8	16.7
Popular media videos	4	17.4	1	5.0	7	14.6
Observation	7	30.4	0	0.0	5	10.4
Other	5	21.7	0	0.0	5	10.4

### **Innovative teaching approaches**

The most frequently identified innovative teaching approach was the use of scenarios/case examples/vignettes. Less frequently used approaches included roleplaying, discussion, games, lecture, and art. Experiential activities, which involved respondents interacting with one another, were also noted. One respondent stated: *“He used the game of Jeopardy as a learning tool. [The] team competed and answered questions and scenarios about ethical principles”* (participant survey response). Another described the use of: *“slow motion role play*



*in which we and a partner spoke to a 'client' and had the instructor pointing out things we did correctly or that needed improvement"* (participant survey response, n.d.). Another respondent described an activity where: *"participants stood in a line ranging from agree to disagree with various scenarios that were presented"* (participant survey response).

### **Topics in ethics related training and education**

Respondents overwhelmingly noted that ethics instruction addressed broad topics including ethical standards (90%) as well as ethical principles and values (89%). A majority noted instruction related to legal and regulatory issues (67%), ethical decision-making models (51%), and malpractice and professional liability (51%). Overall, fewer noted ethics training related to professional licensing requirements (43%), although students reported a higher percentage (59.1%).

Regarding specific ethical standards, over 88% indicated that boundaries and/or dual relationships, as well as confidentiality and privacy, were addressed. Other frequently addressed topics included sexual relationships with clients (83%), duty to warn (78%), conflicts of interest (77%), cultural competence (76%), giving and receiving gifts (76%), competence (73%), and termination of services (73%). Conversely, topics covered less regularly included private conduct (42%), technology in social work practice (40%), commitments to employers (35%), and solicitation of clients (29%) (see Table 4).

#### **Table 4**

##### *Topics in Ethics-Related Training and Education*

<b>Topic</b>	<b>n</b>	<b>%</b>
Boundaries and/or dual relationships	78	88.6
Confidentiality and privacy	78	88.6
Sexual relationships with clients	73	92.9
Duty to warn	69	78.4
Conflicts of interest	68	77.3
Giving and/or receiving gifts	67	76.1
Cultural competence	67	76.1
Termination of services	64	72.7
Competence	64	72.7
Physical contact with clients	61	69.3
Personal versus professional values	60	68.2
Attraction to clients	60	68.2
Access to client records	59	67.1
Integrity of the profession	58	65.9
Unethical conduct of colleagues	55	62.5
Supervision and training	54	61.4
Impairment or incompetence of colleagues	49	55.7
Bartering for services	48	54.5
Evaluation and research	48	54.5
Referral for services	44	50.0
Use of social media	42	47.7
Payment for services	42	47.7
Social and political action	40	45.4
Private conduct	37	42.0
Technology in social work practice	35	39.8
Commitment to employers	31	35.2
Solicitation of clients	26	29.5
Other	2	2.3

Student ratings differed from educators and practitioners on several topics. Students noted private conduct was addressed more frequently (72.7%) as compared to educators (26.3%) and practitioners (34.7%). Likewise, students noted the use of social media (86.3%) as a topic more frequently than educators

(21.0%) and practitioners (41.3%). Technology in social work practice was rated at a higher percentage by students (68.2%) as compared to educators (15.8%) and practitioners (36.9%) as well (see Table 5).

**Table 5**

*Topics in Ethics-Related Training by Respondents*

Topic by respondent type	Student		Educator		Practitioner	
	n	%	n	%	n	%
Boundaries and/or dual relationships	21	95.4	15	78.9	42	91.3
Confidentiality and privacy	20	90.9	17	89.4	41	89.1
Sexual relationships with clients	20	90.9	15	78.9	38	82.6
Duty to warn	16	72.7	17	89.4	36	78.2
Conflicts of interest	19	86.3	11	57.9	38	82.6
Giving and/or receiving gifts	19	86.3	12	63.1	36	78.2
Cultural competence	20	90.9	12	63.1	35	76.1
Termination of services	18	81.8	10	52.6	36	78.2
Competence	19	86.3	12	63.1	33	71.7
Physical contact with clients	19	86.3	10	52.6	32	69.5
Personal versus professional values	18	81.8	11	57.9	30	65.2
Attraction to clients	17	77.2	11	57.9	32	69.5
Access to client records	18	81.8	13	68.4	28	60.8
Integrity of the profession	20	90.9	11	57.9	27	58.7
Unethical conduct of colleagues	16	72.7	10	52.6	29	63.0
Supervision and training	17	77.2	7	36.8	30	65.2
Impairment or incompetence of colleagues	17	77.2	6	31.5	26	56.5
Bartering for services	14	63.6	8	42.1	26	56.5
Evaluation and research	16	72.7	5	26.3	27	58.7
Referral for services	14	63.6	4	21.0	26	56.5
Use of social media	19	86.3	4	21.0	19	41.3
Payment for services	17	77.2	5	26.3	20	43.4
Social and political action	15	68.1	4	21.0	21	45.6
Private conduct	16	72.7	5	26.3	16	34.7
Technology in social work practice	15	68.1	3	15.8	17	36.9
Commitment to employers	13	59.1	4	21.0	14	30.4
Solicitation of clients	9	40.9	3	15.8	14	30.4
Other	1	4.5	0	0.0	1	2.1

## **Compelling or memorable topics**

In addition to a prescribed list of ethical topics, respondents freely noted the most compelling or memorable ethics related topic addressed in their social work education. The most frequently identified topics included boundaries, confidentiality, self-determination, and cultural competency. Also cited more than once were topics such as supervision, end of life, ethical decision-making, code of ethics, social media and technology, and issues related to transference and countertransference. Some of the more unique topics included institutional racism, money, whistleblowing, and the sexuality of clients.

## **Topics not addressed in training or education**

To identify gaps between training and professional practice, respondents described ethical dilemmas and topics encountered in practice but not covered in training or education. As expected, responses to these questions reflected a wide range of complex situations. Common elements from the responses were identified and categorized into four key areas: (1) client related practice, (2) practitioner related issues, (3) challenges with employers and colleagues, and (4) commitments to the profession and broader society.

### ***Client related practice***

Respondents noted many complex client related situations such as suspected foul play by the spouse of a client who committed suicide, a client in an inpatient psychiatric unit seeking an abortion, and ensuring self-determination of a non-English speaking refugee slave. Other client related examples included gift giving, end of life care for pediatric patients, diagnosing, and confidentiality.

### ***Practitioner related issues***

Social media and technology were cited frequently by respondents as not being addressed in training or education. In addition, respondent's highlighted issues associated to self-care, personal versus professional boundaries, being in recovery, setting fees, private conduct, and practice skills.

### ***Challenges with employers and colleagues***

The most frequently noted responses fell into this category. Challenges with employers included a lack of training in dealing with impaired colleagues, responding to a supervisor who asks you to do something unethical, working in interdisciplinary groups, and agencies wanting practitioners to provide services

without proper training or resources. One respondent put it this way: “*keep the job or go with the flow*” (participant survey response). Challenges with colleagues included dishonesty and deceit of a colleague, avoiding confronting colleagues’ unethical behavior, and alleged negligent supervision. One respondent stated: “*more discussion of the professional challenges of doing what is ethically correct even when that decision goes against one’s boss or agency*” (participant survey response).

### ***Commitments to the profession and broader society***

Finally, respondents noted a lack of training related to obligations to engage in social action and advocacy as well as obligations to serve vulnerable populations. Additionally, respondents listed issues related to the implications of racism, sexism, heterosexism, and how to respond to current events occurring in the community, nation, and world.

### **Characteristics of ethics related training and education**

Most respondents (92.4%) indicated that social work ethics content was infused throughout their social work curriculum, although 25% also indicated that ethics was taught as a discrete (standalone) course during their social work education. Over 76% of respondents attended an average of 5.5 hours of ethics related professional development or continuing education within the past 12 months.

### **Ethics content and preparation for practice**

Likert scale questions revealed respondents’ perceptions about ethics related training and education. Almost all respondents agreed that they could identify an ethical situation when confronted with one (97.7%). Likewise, respondents agreed that social work ethics coursework and continuing education was relevant to their professional practice (88%). Far fewer agreed whether ethics education should focus primarily on the NASW Code of Ethics (59.7%) or ethical decision-making models (60.4%).

### **Resources used to resolve ethical issues**

Respondents identified the top three resources that were most helpful in resolving ethical issues. The NASW Code of Ethics (76%) and consultation/supervision (74%) were the most frequently cited resources used to resolve ethics related issues, although educators relied more heavily on the NASW Code (90%) as compared to students (78.2%) and practitioners (69.5%). Moreover, practitioners noted the use of consultation/supervision more frequently (78.2%) as compared to educators

(75%) and students (65.2%). Less frequently used resources included previous training and/or education (37%), ethical decision-making models (22%), and books/journal articles (12%). Educators relied on previous training (55%) more so than practitioners (34.8%) and students (30.4%) (see Tables 6 and 7).

**Table 6**

*Top 3 Resources Used That are Most Helpful When Resolving Ethical Dilemmas*

Resource	n	%
NASW Code of Ethics	69	76.6
Consultation or supervision	67	74.4
Previous training and/or education	34	37.7
Prior experience with a similar ethical dilemma	23	25.5
Ethical decision making models	20	22.2
NASW (state or national)	18	20.0
Ethics committee (agency)	15	16.6
Books or journal articles	11	12.2
Intuition	11	12.2

**Table 7**

*Top 3 Resources That are Most Helpful When Resolving Ethical Dilemmas by Respondent Type*

Top 3 resources used by respondent type	Student		Educator		Practitioner	
	n	%	n	%	n	%
NASW Code of Ethics	18	78.2	18	90.0	32	69.5
Consultation or supervision	15	65.2	15	75.0	36	78.2
Previous training and/or education	7	30.4	11	55.0	16	34.7
Prior experience with a similar ethical dilemma	8	34.7	8	30.0	9	19.5
Ethical decision making models	3	13.0	4	20.0	13	28.2
NASW (state or national)	5	21.7	1	5.0	12	26.1
Ethics committee (agency)	4	17.4	1	5.0	10	21.7
Books or journal articles	6	26.1	3	15.0	2	4.3
Intuition	3	13.0	0	0.0	7	15.2
Malpractice carrier	0	0.0	0	0.0	0	0.0

Most respondents agreed that ethics related training prepared them to address ethical challenges in practice (93.1%). Likewise, the clear majority of respondents indicated they felt both confident (90%) and competent (93%) in their ability to resolve ethics related issues and dilemmas in practice. Responses varied regarding the specific techniques or approaches used to solve dilemmas. Most respondents agreed they thoroughly evaluated options before taking action (96.5%), mentally rehearsed what-if scenarios (88.5%), and generated arguments for and against each decision (83.9%), but far fewer respondents used decision-making tools to solve ethical dilemmas (30.2%).

## **Interviews**

Fifteen individual interviews were conducted by the co-investigator to further understand respondent's experiences with ethics related education and training. The co-investigator conducted the interviews after respondents completed the online survey. Responses to the interview questions were transcribed and coded. Several themes emerged related to the instructional strategies as well as the types of ethical dilemmas encountered in practice.

## **Instructional strategies**

Regarding creative or innovative instructional approaches in ethics training or education, one third of respondents stated that no creative or innovative strategies were used, as reflected in this typical response *"Can't describe one. No creative approach"* (Participant 1, Interview). However, when respondents were able to identify creative approaches, almost half identified the use of vignettes or scenarios which incorporated discussion elements. One respondent stated: *"I like specific case examples that might mirror what we face in practice. Talk about possible solutions and having someone with experience to explain what they would do"* (Participant 2, Interview). Two respondents noted the use of role-plays such as *"some form of role-playing, where we talk about initial reactions and then we get to unpack it and discuss what it really looked like. Identifying the roadblocks you would run into"* (Participant 3, Interview). Two respondents identified more unique approaches such as games/competition and experiential activities. One respondent recounted a *"game of ethics Jeopardy"* (Participant 4, Interview) that was used as an activity in the afternoon session to reinforce the didactic portion of the training from the morning. Another respondent detailed an *"experiential art therapy technique"* (Participant 5, Interview) which included reviewing ethical standards and presenting cases, along with an expressive art project and creating an ethics board game to take with them from the training.

## **Ethics related topics**

Interviewees identified specific ethics related topics that were not addressed in training or education. Most topics were client related and reflected the complexity of social work practice. While common topics such as documentation, boundaries, and confidentiality were noted, the specific situation in which the conflict arose was quite exceptional. For example, one respondent reflected on an instructor who asked whether it was *“ever okay to be in bed with a client”* and then recounted an experience with an 87-year-old hospice patient who requested the social worker to *“get into the hospital bed and hold her”* (Participant 6, Interview). Regarding documentation, one respondent said: *“Many ethical dilemmas regarding documentation. How much is enough and too much? Are you helping or hindering by labeling?”* (Participant 7, Interview).

Participants also identified topics such as working with attorneys and the court system, insurance and billing, eligibility for services, money and client care, and impaired colleagues. The most complex scenarios reflected the intersection of multiple ethical standards such as conflicts between personal and professional values related to religion and faith, interpersonal relationships with colleagues and supervisees, and interdisciplinary work with professionals from other disciplines such as doctors, nurses, probation officers, and other helping professionals.

## **Resolving ethical dilemmas**

When asked how the teaching approaches contributed to their ability to resolve ethical dilemmas, interviewees noted the value of engaging in discussion and hearing alternative viewpoints. One interviewee stated: *“I enjoy thinking about different sides of things. Helpful because you have to be able to look at different sides to come to a solution. Even if you end up going with the original decision, you at least looked at the other side. I’m proud to bring up other things or ways of looking at situations”* (Participant 8, Interview). Additionally, interviewees reiterated that teaching approaches which reinforced critical thinking and used examples which were connected to previous experience prepared social workers for practice and contributed to their ability to resolve ethical dilemmas.

## **Discussion**

To prepare practitioners for ethical practice, sound instructional strategies and relevant ethics topics must be addressed during coursework and continuing education. Overall, the results of this exploratory study illustrate that the vast majority of social work students, practitioners, and faculty respondents believed



that ethics related coursework and continuing education were relevant to their professional practice. Likewise, respondents were confident in their ability to identify and resolve ethics related issues in practice. Despite this confidence, however, several inconsistencies regarding instructional practices and topics of instruction were noted.

## **Instructional strategies**

Two of the top three instructional strategies used to teach social work ethics were passive strategies (lectures:  $n = 68$ ; readings:  $n = 58$ ). In fact, when asked specifically whether respondents had ever participated in a class or training where a creative or innovative instructional strategy was used almost 69% said they had not. One respondent stated: *“Off the top of my head, I can’t think of one. That’s one of the biggest struggles attending ethics trainings, new information may be presented, but I’ve not attended one that was innovative or provided a new way of learning about it. Typically, a decision making model is presented and here’s how to use it. Nothing super creative, not innovative”* (Participant 9, Interview).

Experiential exercises ( $n = 15$ ), which incorporate active learning, were identified as unique or innovative approaches to teaching ethics or ethical decision-making. One respondent stated: *“You had people line up along a continuum from agree to disagree and then move your position along the continuum as new information was given”* (Participant 6, Interview). Another respondent noted: *“I created an experiential art therapy technique. It was an expressive use of your ethical self and participants had to do an expressive art project. The group also created an ethics board game to use if they had to teach other about ethics. Each person left the training with a game for the organization”* (Participant 5, Interview). These innovative approaches to teaching ethics departed from the typical “tell me about ethics” lecture style by implementing active learning strategies.

## **Ethics related topics**

Ethics related education and training addressed a multitude of topics, however the most frequently cited topics related to work with clients. A variety of instructional approaches are being used to teach social work ethics however, the results are inconsistent with the social work literature. Vignettes and case studies are common activities used to teach ethics (Dodd & Jansson, 2004; Fossen et al., 2014; McCormick et al., 2014; Ringel & Mishna, 2007), yet this survey found that lectures were the most common method of ethics instruction. Non-interactive instructional methods such as the use of lectures and readings were found to be used quite frequently in this study, which supports the opinions of several

respondents regarding the lack of creativity in teaching methods. If ethics education is meant to prepare students and practitioners for ethical practice, then the strategies used to teach ethics should aid in this endeavor, yet only a small minority of respondents (37%) indicated that previous training or education was used as a resource for resolving ethical dilemmas. Likewise, the social work literature focuses on the use of conceptual or theoretical models to teach ethical decision-making (Congress, 2000; Castro-Atwater & Hohnbaum, 2015; Fossen et al., 2014) but only 22% of the respondents in this study actually used ethical decision making models when resolving ethical dilemmas.

In open-ended survey responses and follow-up interviews, participants identified the importance of reviewing cases and then discussing them as a group. This type of debriefing encourages learners to consider multiple perspectives and evaluate their position on an ethical issue. Similarly, respondents valued the opportunity to talk through an ethical dilemma. Using a think-aloud strategy illustrates different problem-solving approaches among learners and provides novice learners with useful steps for solving complex problems. The use of debriefing and think-aloud strategies provides social workers with valuable feedback while completing ethics activities and encourages the exploration of alternative viewpoints. Faculty and instructors should consider incorporating these strategies in ethics related training and education.

The results from this study and the literature concur that ethics instruction focuses predominantly on client related topics such as boundary issues, confidentiality, sexual relationships with clients, and duty to warn. Equally as important, but not addressed as frequently are topics related to practitioner competence, impaired colleagues, commitments to employers, and political/social action. Likewise, the use of technology and social media is proliferating in personal and professional settings yet ethical standards for guiding social workers is only beginning to emerge. Ethics instruction should be broadened to address relevant, contemporary topics.

As this study highlights, there appears to be a disconnect between the types of instructional strategies used in ethics education (lecture and readings) and what practitioners value in practice (scenarios and discussion to uncover alternative viewpoints). Moreover, the topics most commonly addressed in ethics related education are not reflective of the complex situations social workers encounter in the field or more contemporary topics that are emerging in practice. These findings inform the development and delivery of ethics related education and training in multiple ways.

## **Implications**

Often, in social work education, faculty and instructors provide ethics related information via lecture and readings. Standards from the NASW Code of Ethics may be reviewed in addition to an ethical decision making model to assist with analyzing a case example. While this approach to teaching ethics likely resonates with most social workers, it is unclear whether this instructional approach provides social workers with the skills and knowledge needed to resolve ethical dilemmas in practice. Ethics instruction should include a variety of proven instructional strategies such as the analysis of ethical dilemmas, group discussion, and role-plays. Furthermore, the variety of ethics related topics should move beyond commitments to clients and address commitments to colleagues, employers, the profession, and the broader society. Moreover, the complexity of ethical issues explored during instruction should reflect the nuances of contemporary practice.

Moving forward, instructors and educators teaching ethics, or including ethics related content in their courses, should review material to ensure current, complex, and relevant case examples are being used. Likewise, interactive activities such as role-playing, small group discussions, or analysis of case examples should be infused throughout the training session to provide opportunities for participants to engage with one another and reflect on their professional practice. Think aloud strategies can be used to highlight problem solving steps and aid novice learners in solving ethical dilemmas.

## **Limitations**

The results of this exploratory study provide valuable information to social work students, educators, and practitioners about ethics related instruction, although several limitations of this study must be noted. First, a new survey instrument was developed because no previously tested survey instrument was available for use in this exploratory study. Several social work students, faculty, and practitioners pretested the survey instrument before being distributed, however, no reliability measures were performed. Second, respondents were asked to recall specific information related to ethics related training that may have occurred many years ago. Thus, the precision of the data was dependent upon the accurate recall of respondent's memories, which may not be complete or precise. Another limitation included sampling bias. The survey was distributed using a NASW state chapter online newsletter and various social media sites such as LinkedIn and Facebook. The survey instrument did not ask respondents to indicate how they learned of the survey, therefore further exploration of sampling concerns would be difficult. The

small sample size ( $n=112$ ), in which respondents were predominantly female, White, and situated in one state limits the generalizability of the findings. A more representative sample of social work students, educators, and practitioners may have yielded different conclusions.

## **Future Research**

This exploratory study investigated the types of instructional strategies being used to teach social work ethics and ethical decision-making as well as the types of ethics related topics being addressed in education and professional training. The results of this study are a beginning step to understanding the broad and multifaceted topic of ill-structured problem solving in social work education. Additional research is needed to explore various teaching strategies such as the use of think-aloud protocols to analyze how social workers resolve ethical dilemmas, the use of argumentation to elaborate and justify solutions to ethical problems, and the use of complex case vignettes that mirror the types of ethical dilemmas encountered in practice. Likewise, more research is needed to explore the ethical decision-making process itself including the use of frameworks and models that guide the process as well as the role of personal, professional, and societal values in decision-making. Finally, additional research should be conducted regarding the advantages and disadvantages of teaching ethics as a standalone course versus ethics content being infused throughout the BSW or MSW social work educational experience.

## **Conclusion**

Social workers encounter complex situations on a daily basis and make ethical decisions that affect the lives of their clients as well as their professional careers. The ability to identify and resolve ethical dilemmas in practice is a critical aspect of social work education and training. It is imperative that the types of instructional strategies used to teach social work ethics as well as the topics covered in education and training enable social workers to engage in effective decision-making in the field. Additional research is needed to explore the effectiveness of different instructional strategies for teaching ethics and ethical decision-making. Furthermore, the complexity of ethical issues social workers confront in practice should be reflected in ethics related training and education. Ultimately, social workers must be prepared to address a wide range of ethical issues related to clients, colleagues, and professional practice. Effective and relevant ethics related instruction is necessary to prepare students and practitioners for ethical practice and the ability to resolve ethical dilemmas in complex, real life settings.

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# Chopped ID: Students Engaged in Gamification to Enhance Advanced Instructional Design Techniques

John Baaki & Tian Luo

*The Food Network's television show Chopped pits chefs against each other, in a three-round battle, to create their best appetizer, entrée, and dessert. Facing master chef judges, the chef participants present their dishes with one chef chopped (eliminated) after each round. The last chef standing is crowned the Chopped Champion. A faculty member in an instructional design and technology program, created Chopped ID, an innovative adaptation and gamification of the Food Network's Chopped for application in a distance learning environment. Participating as competitors and judges, graduate students, firsthand, experienced gamification as an advanced instructional design technique. In the end, Chopped ID helped graduate students improve their instructional design skills.*

The Food Network's television show Chopped pits chefs against each other, in a three-round battle, to create their best appetizer, entrée, and dessert. Chefs face demanding constraints like a time clock, a mystery basket of ingredients, and a call to create a dish using the mystery ingredients that is delicious, creative, and one that meets a presentation expected from a well-respected restaurant. Facing a trio of master chef judges, the chef participants present their dishes with one chef chopped (eliminated) after each round. The last chef standing is crowned the Chopped Champion.

As a faculty member in an instructional design and technology (IDT) program, the instructor (first author) is a big fan of Chopped and was intrigued about how the show highlights key elements of gamification and the characteristics of design. Like designers, chef participants need to tolerate and deal with uncertainty, show

confidence to conjecture, interact with a physical item, and rely on intuition and reflection-in-action (Cross, 2011). The instructor saw a connection with what the Chopped chefs experience and what instructional designers experience when solving complex problems and designing effective and efficient interventions. Using online web conferencing, the instructor created Chopped ID, an innovative adaptation and gamification of the Food Network's Chopped for application in a distance learning environment. Graduate students in an Advanced Instructional Design Techniques course had three rounds of 12-15 minutes to create and present their progressively complex solutions to a specific instructional design case. Other online graduate students served as expert judges and discussed and selected who would be chopped after each round. We share Chopped ID by presenting the literature that grounded Chopped ID, a description of the Chopped ID setting, the Chopped ID process, and the participants' perceptions of how Chopped ID helped them become better instructional designers.

## **Background**

Enthusiastically explicit in our belief that instructional designers are designers first who design instruction and embracing this belief through gamification, we were interested in the alignment between what instructional designers are expected to do and the aspects of designing and the essential features of design ability. We found a foundation for this alignment in Tessmer and Wedman's (1990) layers-of-necessity model. Kapp's (2012) work in game-based strategies for training and education provided a gamification framework for Chopped ID.

## **A Way of Thinking about Instructional Design**

As a practitioner's model, from simplified to highly complex instructional design (ID) approaches, the layers-of-necessity accounts for a breadth of designer expertise and practice. Designer constraints like time, duration, money, personnel, stress, difficulty, content and project familiarity, and material resources are essential to the layers-of-necessity (Tessmer & Wedman, 1990). Each layer is self-contained and matches what is necessary for the project. For an ID situation with severe constraints (limited budget and tight timeline), only one layer may be possible. For situations where more time and resources are available, a designer then may use more sophisticated layers.

Tessmer and Wedman viewed the layers-of-necessity as a new perspective on ID which provided insight into how instructional designers think about design, which is no easy task. Even though people have been designing since the beginning of time, the way in which people design has been poorly understood for a rather long



time (Cross, 2011). To illustrate that the layers-of-necessity is a way of thinking about instructional design and that instructional designers exhibit the essential features of design ability, we discuss how the layer-of-necessity characteristics of task enhancement, principle-based design, and opportunistic perspective were embedded in Chopped ID. To connect to the essential features of design ability, Cross summed up what designers say about design:

There is a need to tolerate and work with uncertainty, to have the confidence to conjecture and to explore, to interact constructively with sketches and models, and to rely upon one's "intuitive" powers of reflection in action. (p. 26)

**Task enhancement.** In the layers-of-necessity approach, ensuing layers enhance the previous completed design work. This was crucial to success in Chopped ID. Rather than iterations where earlier instructional design components are revised, in each round, Chopped ID participants added onto the design work that was done in the previous round. Designers discover the layers of their project (Cross, 2011). In each Chopped ID round, Chopped ID participants engaged with a design representation (e.g. PowerPoint) that was another layer following on from the previous rounds' design representation.

**Principle-based design.** In a layered approach to thinking about instructional design, principles, not procedures, govern design and development activities (Tessmer & Wedman, 1990). A principle-based perspective asserts that instructional design is based on layer-selection principles and layer-implementation principles. Layer-selection principles determine which instructional design activities are feasible given the design constraints while layer-implementation principles guide how the various design and development activities are implemented.

Chopped ID participants designed in uncertainty. Participants had no clue about each round's ID scenario. Cross (2011) described uncertainty as the joy and frustration that designers get from their design activity. Designers cope with uncertainty by providing order. In studying urban designers, Levin (1966) witnessed designers leaping to partial solutions before they had fully formulated the problem. To formulate partial solutions, designers provided information or the "missing ingredient," (Levin, 1966, p. 8). Levin called the missing ingredient an "ordering principle" which is the formal properties that are evident in a designer's work (p. 8). Chopped ID participants relied on sound ID principles to design strategies for facts, processes, concepts, and rules.

**Opportunistic perspective.** Ambiguity and constraints are necessary to the

design process. Ambiguity allows all those involved in the design process the freedom to move about independently among the design objects (Cross, 2011). Constraints allow for reflection and taking stock in what designers have done and what designers still can do. Tessmer and Wedman explained that instructional design is opportunistic. In a layered approach, design components may be deleted or minimized. Taking an opportunistic perspective, instructional designers identify how to work with constraints. When designers know the constraints they then can design.

No designer will settle for good enough when they can have the best. However, this is not how a problem usually comes about in actual design situations. "In the real world we usually do not have a choice between satisfactory and optimal solutions, for we only rarely have a method of finding the optimum," (Simon, 1969, p. 64). Simon introduced the term satisficing to describe such situations. Tessmer and Wedman defended that a layers-of-necessity approach is consistent with Simon's satisficing. Instructional designers oftentimes must select actions, "which get the job done while not necessarily in an optimal manner," (Tessmer & Wedman, 1990, p. 79). Chopped ID competitors designed under strict time and scenario constraints. Competitors' designs had to satisfy the necessities of the presented ID situation.

## **Gamification**

Gaming is a prevalent phenomenon occurring worldwide. Currently, more than 1.2 billion people are playing computer, mobile, and console-based videogames around the globe, among whom approximately 700 million play online; this is equal to 44% of the world's total online population (Spil Games, 2013). The Pew Research center reported that 49% of adults in the U.S have played video games with 10% of them believing that they themselves are gamers (Duggan, 2015). Games have become one of the most prominent new media, which has multiple implications for learning due to their prevalence and popularity. Incorporating gaming mechanics and thinking into educational practices to improve and augment learning appeals to many educational researchers and practitioners.

Gamification is a process of incorporating gaming mechanics and elements into a non-gaming context (Deterding et al., 2011; Kapp, 2012; Zichermann & Cunningham, 2011). A video game typically possesses all of those commonplace gaming mechanics including narratives, quests, levels, points, virtual goods, and leaderboards, used in isolation or in various combinations. Behind the scenes of these gaming mechanics, there exists various fundamental gaming elements and principles that are contained within them which make games engaging, exciting,

motivational, and even irresistible. Gamification, therefore, is a way of applying those gaming elements and principles in a non-game setting.

Kapp (2012) identified eleven elements in his book to illustrate how those elements can be applied in an instructional environment and create a gamified learning experience, including setting goals, creating rules, involving conflict and competition or cooperation, considering time, establishing reward structures, providing feedback, creating levels, and storytelling. Similarly, Nicholson (2015) synthesized six key elements of gamification as recipes for meaningful gamification, namely, play, exposition, choice, information, engagement, and reflection. In a systematic mapping study, Dicheva et al. (2015) found that the most commonly discussed educational gamification design principles from empirical studies are: storytelling, competition and cooperation/social engagement loops, feedback, challenges and quests, and customization.

The use of gamification can be applied in various disciplines and used to teach knowledge in different cognitive domains. Research evidenced that the game-based teaching approach outperformed the conventional teaching approach in varying facets across a plethora of contexts. Early studies have shown that students produced substantial knowledge gains via a gaming approach as opposed to case-based teaching methods in the field of business (Wolfe, 1997). In a meta-analysis study, participants using interactive simulations or games demonstrated an increase of cognitive development compared to conventional methods (Vogel et al., 2006). The game-based approach holds considerable potential in teaching conceptual knowledge (Squire et al., 2004; Ravenscroft & Matheson, 2002), procedural knowledge (Padgett et al., 2006; Sitzmann, 2011), problem-solving (Akcaoglu, 2014; Baytak & Land, 2011; Monreno, 2004), and appears to aid higher-order learning more than declarative or factual knowledge (Ke, 2009).

In an affective learning domain, participants reported a higher level of confidence when they participated in a job-related, game-based training program versus training via traditional methods (Sitzmann, 2011). Other studies suggested that self-efficacy, attitudes toward learning, and motivation are enhanced in game-based learning environments (Thomas & Cahill, 1997; Tuzun, 2007; Van Eck, 2006). While a myriad of evidence from prior literature supports the potential effectiveness of game-based learning, researchers believe that theoretical and empirical studies are still in need to understand nuances in gaming design and development across different contexts (Hays, 2005; Sanchez et al., 2010).

Findings of current literature have also suggested a natural parallel between instructional design and game design. As Becker (2008) stated, games as a medium are highly suitable for the implementation of various instructional design

models and principles, yet the models may be deemed as an underlying thread embedded throughout the ongoing progression of the game. For example, gaming researchers have found that one of the classical instructional design models, Gagne's (1985) Nine Events of Instruction, is often covertly exemplified in almost all elements of game design (Becker, 2008; Copp et al., 2013; Gunter et al., 2006). Gunter et al. (2006) contended that seven of nine events, such as providing learner guidance, eliciting performance, and promoting feedback, precisely align with design principles and elements of a game of any kind.

In this study, we contend that gamification as an overarching instructional strategy echoes varying principles of good instructional design and is a suitable strategy to utilize in an online course focusing on instructional design. Although Nicholson (2015) suggests that not every element of his framework needs to be part of a gamification system for it to be successful, the more elements it contains, the more likely the system would offer different ways of engaging students. Our goal for Chopped ID was to employ game-like thinking and game mechanics, using them to create a gamified learning experience aiming to engage, motivate, and assist instructional design graduate students.

## **Purpose**

Our purpose is twofold. First, we share how the instructor organized Chopped ID and how students engaged in Chopped ID as competitors and judges. Second, we present students' perceptions of how Chopped ID helped them become better instructional designers.

## **Evaluation Process**

A graduate level course, the purpose of Advanced Instructional Techniques is to explore and apply techniques, tools, and competencies characteristic of expert designers. Students investigate instructional strategies, program design, advanced analysis techniques, rapid prototyping, reducing cycling time, and designing instruction for diverse learner populations. As a distance learning course, local students may attend the class face-to-face while distance students may attend the class via WebEx. The synchronous classroom is set up so distance students, local students, and the instructor may interact in real time. For this particular Advanced Instructional Techniques course of 13 students, two students attended the class face-to-face and 11 students attended via WebEx. Six students were working towards a master's degree while seven students were on a PhD journey.

With the intent to gain a full view of participants' perspectives, we interviewed six students who had varying success as competitors. We interviewed one student who was eliminated after the first round, one student who was eliminated after the second round, one student who lost in her week's final round, one student who lost in her week's final round and was chosen as a wildcard for the Chopped ID Championship, the Chopped ID Championship runner-up, and the Chopped ID Champion. Three students were following a master's track while three students were on a PhD journey. Table 1 provides pseudonyms of the competitors that we interviewed.

**Table 1**

*Competitors Who Were Interviewed and How They Finished in Chopped ID*

<b>Competitor</b>	<b>How Competitor Finished</b>
Clare	Chopped in Round 1 of competing week
Drew	Chopped in Round 2 of competing week
Holly	Chopped in Round 3 of competing week
Lynn	Chopped in Round 3 of competing week, earned wild card spot in Chopped ID Championship
Paula	Runner-up in Chopped ID Championship
Gail	Chopped ID Champion

In interviews via phone or Skype which lasted approximately 20-30 minutes, each author interviewed three students asking the following four guiding evaluation questions:

- what was your perception of gaming as an instructional design technique prior to you participating in Chopped ID,
- what was your perception on gaming as an instructional design technique after you participated in Chopped ID,
- how did your perceptions change as you competed, judged, and observed your fellow students compete, and;
- how did participating in Chopped ID make you a better instructional designer

During each interview we took notes and then transcribed our notes within 24 hours after the interview. Applying member-checking techniques, we sent our transcriptions to the students and asked each student to review his/her transcription to ensure that we captured all responses accurately. All six students

reviewed his/her interview transcription and provided clarification and additional responses where appropriate. First, separately, the two authors analyzed interview responses that we conducted and captured themes that emerged from the evaluation questions. Second, we then met and discussed the differences and similarities of our themes. Third, we then analyzed the interview responses of each other's interviews and then met again to finalize the themes for each question. We discuss the themes below.

## **Chopped ID Process**

In weeks 6 through 10 of the semester, class topics included designing instructional strategies for four content-performance types: (a) facts, (b) procedures, (c) concepts, and (d) rules (Morrison et al., 2007). Beyond understanding the strategies, the instructor wanted students to experience designing instruction using strategies for content-performance types. Each week of Chopped ID focused on one of the content-performance types. Each student competed at least once as a Chopped ID competitor. Week 10 was the Chopped ID championship where the winners of each week plus one wild card competitor competed to be named the Chopped ID champ. The instructor chose the wild card competitor based on the best performance by competitors who made it to the third round of their respective week but were ultimately chopped.

### **The Competitors**

For each round, the instructor presented competitors a design scenario. Competitors had no prior knowledge of the scenario content. Competitors only knew that the scenario was tied to the week's content-presentation type. In week 7, competitors had to design strategies for facts. The Round 1 design scenario was as follows:

DIYA (Do-it-yourself Assistance) Hardware is taking the country by storm. As an upscale hardware store, the DIYA founders believe that they have found a niche. Their research and the popularity of DIY cable programs show that more and more people are becoming do-it-yourselfers. The DIYA Hardware founders' research shows that do-it-yourselfers are educated, independent, and have flexible work schedules. A fast growing DIY population is university staff, students, and faculty. The DIYA founders are opening stores near university campuses.

The goal of the DIYA founders is to have stores with unparalleled customer service.

They aim to be the Southwest Airlines of the electric sander, the Disney of deck stain.

The focus on customer service is based on more research. The founders have discovered that do-it-yourselfers know how to do it but do not know what to use to do it. They do not know the differences between the proper tools and supplies.

To provide this customer service, the founders strongly believe in hiring university students. The Norfolk store will open in May and will hire students.

You have been hired to design the DIYA new employee orientation. For this round, you are focusing on an All about Screws lesson that will teach employees the different types of screws and what screws work best with different kinds of materials.

For Round 1, competitors had to produce a design representation that answered who are the learners and what are the objectives of the All about Screws lesson? Competitors had 12 minutes. At this point, the competitors left WebEx and entered the Chopped ID WebEx room where they designed. Competitors could not hear what was going on in the class WebEx room. After 12 minutes, the competitors were invited back into the class WebEx room where each competitor shared and explained his/her design. Once all competitors presented their designs, competitors returned to the Chopped ID WebEx room where they waited for their fate. The instructor invited the competitors back to the class WebEx room and the instructor announced who was chopped. This process continued for Round 2 and Round 3 with one competitor chopped after each round.

## **The Judges**

If a student was not competing, then the student was a judge. For each round, judges judged competitors' design representations on creativity, presentation and solid instructional design based on the week's content-presentation type (e.g. designing instructional strategies for facts). While competitors designed in the Chopped ID WebEx room, judges discussed their expectations for the round. Once the competitors had presented their design representations and returned to the Chopped ID WebEx room, judges deliberated on who should be chopped. In the

end, majority ruled. Once the instructor declared the chopped competitor, one judge explained why the competitor was chopped. When a competitor was chopped, he/she became a judge for the rest of the week's competition.

**The Instructor (Host)**

As the Chopped ID host, the instructor created the design scenarios and coordinated weekly game operations and aesthetics. Table 2 shows the similarities between the Food Network's Chopped and Chopped ID as it relates to critical game elements. When competitors came back to face the judges' decision, the instructor used the class WebEx room overhead camera to show an actual chopping board where a 12" x 9" envelope lay containing the name of the chopped contestant. On the envelope, "Whose design is on the chopping block?" was printed. On the Food Network show, the winning chef goes home with \$10,000. For Chopped ID, the instructor presented and then sent the winning designer a \$10 Starbucks gift card.

The judges did all the chopping. When judges were deadlocked on who to chop, the instructor required the judges to make a decision as a competition rule was a competitor had to be chopped after each round. The only influence that the instructor had on Chopped ID results was choosing the wild card contestant.

**Table 2**

*The Similarities of Food Network's Chopped and Chopped ID as it Relates to Critical Game Elements*

<b>Games have</b>	<b>Food Network's Chopped</b>	<b>Chopped ID</b>
Goals and Rules	3 rounds, must use basket ingredients, someone is chopped after each round	3 rounds, must design to provided scenario, someone is chopped after each round
Conflict, competition, or cooperation	Compete: Start with 4 chefs and end with 1 chef	Compete: Start with 3-4 instructional designers and end with 1 designer
Time	Each round is 20 or 30 minutes	Each round is 12 or 15 minutes
Reward structures and feedback	Present your dish to the judges, advance to the next round, win \$10,000	Present your design to the judges, advance to the next round, win \$10 Starbucks card
Levels	3 levels: Appetizer, entrée, and dessert	3 levels: Each scenario builds on the previous scenario
Storytelling	Themed competitions: Chopped Jr., Chopped BBQ, Chopped Thanksgiving	Scenarios tied together as 1 instructional design story
Aesthetics	Kitchen, pantry, the chopping block	Scenario template, chopping block, suspense envelope, slide of fame
Replay or do over	Redemption show where those chopped in the final round come back to compete	Wildcard to get into finals for one designer who was previously chopped in a final round



# Reflections and Implications

In planning Chopped ID, the instructor had two main goals. First, the instructor wanted the students to experience gamification as an advanced instructional design technique. Gamification experience was important, as it is one thing to learn and understand about gamification it is another thing to experience it firsthand. Second, the instructor wanted students to improve their instructional design skills. In the end, the purpose of the class was to make students better instructional designers. We reflect on these two goals and share the implications.

## Experiencing Gamification

In the week prior to the first Chopped ID competition, the instructor and students discussed Kapp's (2012) work in game-based strategies for training and education. In addition to the game elements (Table 2), the instructor and students reflected on the theories behind gamification. Students were intrigued to see that theories that they had read, discussed, and applied in other instructional design classes were relevant to gamification. The instructor challenged himself to ensure that some of these theories would surface in Chopped ID. Table 3 presents the connection of Chopped ID and key theories behind gamification.

**Table 3**

*The Connection of Chopped ID and the Key Theories Behind Gamification*

<b>Theories behind Gamification</b>	<b>Chopped ID</b>
Motivation (Keller's ARCS Model)	Grabbed designers' and judges' attention, showed relevancy to real instructional design situations, instilled confidence in that designers produced good designs, and resulted in satisfaction for the Chopped ID champion
Self-determination	Designers were in control of their designs, experienced competence in designs, and related to design competitors
Scaffolding	Focused on an instructional design theme, each round's scenario built on the previous scenario
Episodic memory	Designers pulled from experience, intuition, and instructional design knowledge
Cognitive apprenticeship	Scenarios were authentic and provided learning opportunities in a way that textbook examples and declarative knowledge cannot
Social learning theory	Designers were competitors and judges, multiple contexts to interact
Flow	Balanced the instructional design challenge with designers' skills and abilities; not too easy where designers became bored and not too difficult where designers have anxiety

In our interviews with six competitors, they explained how difficult it was competing in Chopped ID. Five of the six competitors noted that they felt intense pressure that, in some cases, led to stress. Lynn explained, "It was stressful. You wanted to save face and you wanted to come off good in front of your classmates." She added, "You see it on TV, but you don't see the intensity." Although competitors did not enjoy the time pressure to design instructional strategies, all six competitors clearly understood that time constraints were an important part of Chopped ID.

Reflecting on the Chopped ID experience, although all six competitors we interviewed had varying levels of success, four competitors shared how to succeed in Chopped ID. Competitors stressed focusing on learning objectives and closely tying the learning objectives to the week's content-performance type. Gail, the Chopped ID Champion, advised:

A few tips for future contestants: focus on learning objectives, tie everything back in the instruction to learning objectives, be focused in the design, be prepared - do the weekly reading and have a good grasp of the material (content-performance type) which will help you focus on each type of instruction and be able to create what is expected.

Competitors provided recommendations which are always important to improving instructional techniques especially gamification. Two recommendations were to provide a practice round for competitors who compete in the first week and specific guidelines for the judges. Clare noted, "The game might not be fair to early contestants as they didn't have much chance to observe before participating as a contestant." Each week of Chopped ID was its own competition. Although the competitors in the first week of Chopped ID had nothing to reference expect for the Food Network's Chopped and the instructor's directions of how Chopped ID would proceed, all four competitors in the first week of Chopped ID were in the same situation. The winner of the first week advanced to the championship week and had the opportunity to participate as a judge in two Chopped ID weeks leading up to the championship week. Chopped ID took place over four WebEx sessions. Adding another week for a run through or practice round would have taken away from other planned topics in the 15-week course.

In Chopped, the chef judges are asked to judge competitors on taste, presentation, and creativity. In Chopped ID, the instructor directed judges to judge competitors on creativity, presentation, and solid instructional design as it relates to the week's content-performance type theme. Holly shared, "It may have been more beneficial if judges could agree on what they were looking for in regard to designing for rules, facts, and principles." Lynn suggested a rubric approach. The

instructor made a calculated decision to leave judging open. Knowing that judges would have down time as competitors designed for 12-15 minutes, the instructor filled this time by facilitating a discussion with the judges on what they would look for in the upcoming round. Overall, this worked well as judges were engaged in reviewing the round's design case and presenting what they thought would be important to view in the designs. Although, in some rounds, judges enthusiastically debated for a length of time regarding who would be chopped, the instructor always agreed with judges' decision.

## **Become a Better Instructional Designer**

The instructor embraced Tessmer's and Wedman's view that instructional design is opportunistic and satisficing. Taking an opportunistic perspective, instructional designers identify how to work with constraints. Satisficing means that instructional designers work with constraints and get the job done. Chopped ID competitors faced strict time and scenario content constraints. Holly noted, "Time constraints did not affect me." She explained that she drew on her corporate background when she often responded with a, "You need it now, no time to reflect" design approach. Holly stated that she saw the design scenarios open enough to allow for different design approaches. She continued that she had to take pieces from different round scenarios and had to be flexible with what the learners wanted to accomplish. Drew saw the constraint of what was going to happen in the next round as a key element of Chopped ID. He clarified, "You are working in one round and thinking what will happen next." Lynn described how, in the WebEx chat, students would chat about their concerns that, when they would compete, they would not be able to come up with a design in the 12-15 minutes. Lynn concluded, "I didn't worry about it. To me, this (competing round by round) is real life."

In designing Chopped ID, the instructor wanted to ensure that all students were involved in the competition. Each week, a student was either a judge or a competitor. Even though we recognized that as a judge, a student had an opportunity to learn, we were surprised how beneficial it was to be a judge. All six competitors that we interviewed either stated that serving as a judge was just as engaging as competing or serving as a judge was more engaging than competing. Clare summarized, "I was engaged more as a judge than actually playing the game, watching everything transpire." She added, "Being a judge gave me the opportunities to see how theory, strategies, techniques lined up in the designs of contestants." The competitors that we interviewed liked working with other judges. Working with other judges helped competitors understand the design better and gave competitors an opportunity to be open to other judge's views.

In the end, Chopped ID was an intense learning environment where students who we interviewed felt that they became better instructional designers. For Clare, Chopped ID enhanced her understanding of gaming and honed her instructional design skills to design and implement her own game. She reflected on Chopped ID, "The experience was transformative. I saw all the gaming elements played out in the game, rewards, engagement, consequences, storyline, and motivation where you keep someone guessing."

Gail and Paula took away that Chopped ID forced them to focus on content-performance types. Gail's, the Chopped ID champ, remarks aligned with three layers of necessity characteristics described above - task enhancement, principle-based design, and opportunistic perspective. She reflected, "ID can be very simple. Even with limited resources, you can still design quality instruction if you can stick to focused instructional techniques and your learning objectives. Understand the key and essence of ID."

Holly and Lynn enjoyed that Chopped ID took place over multiple weeks. Viewing four different design scenarios, over a total of 12 rounds, by 13 different instructional designers provided Holly and Lynn and opportunity to see alternative ways to approach the design scenarios. Holly stated, "It showed different ways to apply constraints and see how others apply constraints." Drew put it this way, "I got to see 12 other people approach things differently. Looking at how people would do this (compete in Chopped ID), I got to see 12 case studies."

## **Conclusion**

Chopped ID showcased alignment between the characteristics of instructional design and key elements of gamification through students designing and developing instructional strategies. Our Chopped ID experience exemplified the design process of a gamified instructional approach and documented students' reactions towards it. While reflecting on the entirety of the Chopped ID process along with various roles in the instructor and students' experience as a competitor, judge, and host, we conclude that students were highly engaged and motivated in the learning experience. While experiencing the authentic challenges and constraints that an instructional designer may encounter as students progressed through Chopped ID, students were able to hone their instructional design skills as they felt that they were better prepared to become competent instructional designers.

Chopped ID is a first step experimenting with the gamification approach in our graduate courses in IDT. Our goals were met as a qualitative exploratory study in

that students perceived this experience favorably while vocalizing various ways in which this experience helped them become better instructional designers. While we offer insights into our gamification design process and student reactions, we did not address how and in what ways precisely the gamification approach helped students as novice instructional designers learn and improve their instructional design skills. Though it was implied in our design approach, we did not ask students to reflect on the gaming elements grounded in the design and to what extent the Chopped ID experience felt like a game to them. We would like to see this approach being carried out further in our next step. Moving forward we would like to continue our research by closely examining any student learning gains such as motivation, engagement, knowledge, and performance, as a result of this gamification approach. We are also interested in replicating the experience in alternative instructional design courses or contexts to explore effectiveness of gamification in any design-related learning contexts as we strongly believe that the gamification approach holds tremendous potential in educating and training instructional designers.

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# Enhancing Instructor Credibility and Immediacy in the Design of Distance Learning Systems and Virtual Classroom Environments

Miguel Ramlatchan & Ginger S. Watson

*What are the optimal techniques for applying the latest generation of telepresence, video conferencing, and communication technologies in distance education and virtual classroom designs? If human beings use more than voice to communicate, what implications does the ability to more effectively replicate eye-to-eye contact have in collaborative distance education? This research study explored the effects of perceived faculty credibility and immediacy during virtual classroom presentations. This quantitative experiment created four independent treatments that varied the video resolution and varied the ability of the instructor to maintain virtual eye-contact with students during each presentation. Participants were assigned into one of the four treatment groups, each listening to the same instructor narration and viewing the same instructor present the same subject matter, only the resolution and camera angle differed. A series of 2x2 Analysis of Variances were conducted on independent groups where an instructor was simultaneously recorded from two high-definition (1920x1080) cameras, one at eye-level and one located 15-degrees above eye-level, during the delivery of a 20-minute instructional module. These two camera angles were also replicated in a lower resolution (320x240). A total of 108 undergraduate and graduate participants completed the video and audio multimedia presentations and completed credibility and immediacy survey instruments. The results suggest that the position of the instructor's camera is more important than the resolution of the recorded video.*

Virtual classroom and video conferencing technologies can be very effective approaches to bridge the psychological and geographic gaps between instructors and students. The use of high-definition telepresence video conferencing can now offer effective, virtual recreations of face-to-face and eye-to-eye learning environments. Practical application of these real-time, two-way audio and video conferences include business meetings, depositions, telemedicine, distance learning, and many more. The implications in distance learning programs are especially interesting. Institutions can create joint programs, share subject matter expertise, and connect geographically disperse instructors and students. Students can now have real-time access to instructors and engage in collaborative discussions from any location with access to reliable Internet connections. The addition of high-definition, 4K, and 8K resolution cameras and monitors add yet another dimension that brings the experience closer to life-like class meetings. However, are the investments in telepresence, high-definition, network architecture, bandwidth, and support worth the costs? In practice, do students notice the subtle nonverbal communication that is enabled by the added technology investments, and does this enhance the learning environment?

Eye contact is an important aspect of communication, and one can apply the latest high-definition telepresence technologies to make virtual eye contact much more realistic. A review of equivalency theory in distance education suggests that by increasing the resolution of the communication medium, the learning environment will become more effective in recreating a traditional face-to-face and eye-to-eye classroom (Simonson, 1995, 1999; Simonson et al., 2009). Equivalency theory advises instructional designers to recreate for distance learning students a learning experience equivalent to those obtained by traditional or local students. Fostering virtual eye contact in a high-definition learning environment should reinforce the students' perceptions of the instructor's social presence, immediacy, and ability to communicate with students. Therefore, given the higher resolution, would these communicative effects of immediacy and eye contact, or the lack of eye contact, be even more pronounced? Additionally, what real-world instructional design considerations would this suggest for the design of future virtual classrooms and distance learning systems?

A virtual classroom, in the context of this study, is a classroom that extends a live, interactive learning environment to and from distant students using video conferencing, telepresence, or web conferencing technologies. Video cameras, microphones, and displays are used to send two-way audio and video between students and instructors, recreating as best as possible a face-to-face classroom. The attention to detail, planning, and design of virtual classrooms are an important aspect of the overall learning experience. Optimal camera placement,

supported end-point and conference resolution, and the bandwidth and network implications of high resolution needs, are a few critical design considerations. The purpose of this research experiment was to investigate the impact of camera angle and video resolution on student perceptions of instructor credibility and immediacy during online courses in virtual classroom learning environments. The best practices created or confirmed by this experiment would then help educators and instructional system designers better implement virtual classroom environments and systems.

## **Theoretical Foundations**

### **Credibility, Immediacy, and Multimedia**

Previous research into virtual classroom and learning environment design, as well as instructor social presence, credibility, and immediacy provide the foundation and stepping off point for this present study. Credibility is a combination of a learner's perception of an instructor's intelligence, character, and goodwill (Miller et al., 2014; Myers & Martin, 2006). Immediacy is the learner's perception of an instructor's nonverbal and verbal communication skills (Dixon et al., 2017; McCroskey et al., 2006). Earlier research using camera angle and display sizes and locations found that participants rated their instructor higher in terms of credibility and immediacy when they viewed the eye-level versions of four video treatments (Jayasinghe et al., 1997). Similar to Jayasinghe et al. (1997), Teven and Hanson (2004), measured for instructor credibility in video trials, and used four different videos. These 7-minute scripted videos were kept as consistent as possible and only varied the presenter's camera eye-contact, movement around the classroom, gestures, and natural levels of enthusiasm. Care appeared to be taken to include immediacy traits and the researchers looked to keep the presentation natural without the immediacy scripted. This experiment found that the treatments that gauged the highest levels of instructor immediacy also considered the presenter the most credible. While camera angle and eye-level positioning do appear to impact credibility and immediacy, would today's high-definition technologies enhance the influence?

Other learning factors and affective characteristics research also indicate the connection between mediated communication and effective learning. Another example of college classroom research used a 15-minute video module in an experiment comparing verbal and nonverbal immediacy to recall and comprehension (Witt & Wheelless, 2001). These researchers found participants

recalled more presentation facts during nonverbal immediacy treatments as compared to specific 'verbal immediacy only' and 'low overall immediacy' treatments. Another study with studio produced video created specifically for an experiment found similar results. These researchers asked their presenter being recorded to look into a camera for 30% of their presentation and to give the lecture again while never looking into the camera (Fullwood & Doherty-Sneddon, 2006). The content of the two presentation videos was kept as identical as possible while a third treatment group listened to only the audio. This research found that the recall was greatest when the presenter looked into the camera, followed by the gaze aversion and the audio-only versions. These research studies suggest that learning can be enhanced when the students can see and hear their instructors and teachers.

### **Eye Contact, Presence, and Immediacy in Distance Education**

The history of film, motion pictures, and television illustrates a trend from low to increasingly higher resolution, with the goal of increasing the realism experienced by the audience (Seels et al., 2001). The ability to replicate reality for viewers, or learners who are not able to readily experience the event being replicated and transmitted, has long been harnessed by educators and instructional system designers (Reiser, 2001). The latest array of communication technology reproduces content more authentically than ever before. The newest telepresence video conferencing systems combine high-definition cameras, large high-definition displays, increased video processing, and increased bandwidth availability (Weinstein & Lichtman, 2005; Szigeti et al., 2009). The result is a system with life-sized displayed images and, perhaps more importantly, the ability to facilitate eye contact in high-definition. Telepresence differentiates itself from typical video conferencing applications with this new functionality, striving to make all distance participants feel as though they are in the same room (Davis & Weinstein, 2006; MacDonald, 2007; Ramlatchan, 2017). Taken together with equivalency theory and the design intent to replicate the live classroom experience, high-definition and telepresence technology should be able to replicate as closely as possible the live classroom. However, is the return on investment worth the cost? Research has shown that the difference between very high-end, immersive telepresence systems and video conferencing are minimal, both were effective means to achieve meeting goals and objectives (Standaert et al., 2015). However, the immersive telepresence system did appear to enhance the building of trust and relationships. Other research has shown that the casual immediacy of informal video may be more effective in certain scenarios as compared to high quality, studio produced video (Ortells-Badness, 2015). Though what positive or negative impact does high-definition cameras, displays, and the additional bandwidth and costs, have on the

learning experience in higher education?

## **Foundational Eye Contact and Communication Studies**

Research suggests that eye contact, timing, movement, posture, gesture, facial expressions, touch, dress, classroom environment, and vocal expressions all play a role in classroom and student dynamics (Knapp, 1971; Thomas-Maddox, 2003). Other research has found that facial expressions, even in the form of black and white photographs, rather than vocalization, better communicate emotion (Mehrabian & Ferris, 1967). Encoding and decoding of nonverbal cues happen largely unconsciously, and many teachers may not recognize the positive or negative feedback they show students (Koch, 1971). The eyes may be the most crucial aspect of nonverbal communication, especially given their ability to both encode and decode information (Hess & Polt, 1960). Recent research has also shown the impact of visual communication in text and video feedback. Students appreciated the relationship building aspects of asynchronous video feedback from their instructor, as compared to text only feedback (Borup et al., 2012). Instructors and learners in classroom settings communicate via nonverbal actions, understanding these actions and learning how to foster this immediacy should improve learning environment designs.

Similar findings have been documented in traditional classrooms. For example, communication motivated by goals and objectives, such as the teaching-learning process, benefit from eye contact (Kleinke, 1986). In a study of preschool children, girls responded more favorably during 5-minute word games to increased eye contact with experimenters (Kleinke et al., 1977). The preschool boys in this study responded less favorably to the increased eye contact; however, this result could potentially be explained by undeveloped social skills. In an analysis of a seminar class of both female and male college students, presumably with more developed social skills, eye contact increased the discussion participation of all students (Caproni et al., 1977). Interpersonal connections and individualized instruction in a group can be established by connecting with each and every student during a lesson (Hodge, 1971). While social presence and immediacy research has been conducted in live classrooms, more is needed to determine how technology can be used to best apply these findings in live distance learning and virtual classroom environments.

These studies highlight research, applications, and practices used to foster eye-to-eye communication and, thus, social presence in virtual classroom environments. These research studies all positively contributed to the creation of equivalence and immediacy using contemporary audio, video, and communication technologies.

However, the evolution from low-resolution video streaming and standard-definition video conferencing may provide a new set of tools to enhance social presence in instructional systems.

## Research Questions

Equivalency theory suggests that distance learning environments should replicate the live classroom as best as possible (Simonson, 1999). High-definition video should provide more realistic learning experiences than previous low-resolution and standard definition technologies. This study examined the effects of eye-level and above eye-level camera angle as well as high resolution and low-resolution video on the social presence aspects of instructor credibility and immediacy. Varying the camera angle and the video resolution in a series of treatments may affect the student's sense of the instructor's social presence. Of specific interest was to what extent can technology decrease psychological distance and increase the credibility and immediacy of teachers and presenters.

Research Question 1: How will differences in camera angle and video resolution compare in terms of participants' perception of instructor credibility?

Research Question 2: How will differences in camera angle and video resolution compare in terms of participants' perception of instructor immediacy?

## Methods

### Participants

The sample in this experiment was drawn from graduate and undergraduate students at a mid-sized, metropolitan university on the east coast of the United States. One hundred and eight participants responded to an announcement listed in the university's daily electronic newsletter emailed to all students. The sample was 69% female, 31% male with an average age of 25.9. Additionally, 13% of the sample were freshmen, 13% sophomores, 22% juniors, 29% seniors, 16% graduate students, and another 7% were taking continuing education classes. Participants were assigned to one of four treatments after completing an online registration form. The random distribution resulted in 25 students in the eye-level camera in high-definition, 25 students in the eye-level camera in low-resolution, 27 students in the high-angle camera in high-definition, and 31 students in the high-angle camera in low-resolution treatment groups.

## Materials and Environment

An experienced, female classroom instructor was used to help create and test the realistic teaching materials. The instructional material consisted of a single video session, recorded from two high-definition studio cameras. The instructor presented an authentic instructional 20-minute module on social media, specifically the history of social media and networking. This pre-recorded mini-lecture was used to emulate a live virtual class and to present identical audio and video presentations to all treatment groups.

One of the university's video production studios was used to record the instructional mini-lecture. Professional level audio was captured using a Sony ECM-77 lavalier microphone, while the instructor was recorded simultaneously by two independent Sony PMW-EX3 high-definition cameras, in 1920x1080 resolution, at 20 Mbps. The first of the pair of cameras was located 3-feet, 6-inches (106.7 cm) vertically and 23 feet (701 cm) horizontally across the classroom from the instructor. Thus, the camera was located at eye level with the seated, presenting instructor. The second of the pair of cameras was also positioned 23 feet away from the presenter though was elevated to a height 9-foot, 6-inches (289.6 cm) from the floor. This height positioned the second camera at an angle 15-degrees above eye-level, thus well outside angles that would mimic eye-contact (Chen, 2002; Gale & Monk, 2000; Grayson & Monk, 2003; McNelley, 2005). The recorded files were used during the eye-level camera angle in high-definition and the high camera angle in high-definition treatment groups. These two video files were also each transcoded into much lower 320x240 resolution, at 225 Kbps, versions. These lower resolution video files were used in the eye-level camera angle in low-resolution and the high camera angle in low-resolution treatment groups. Figure 1 illustrates the camera configuration and video resolution of the four instructional videos used in each treatment.

### Figure 1

*Instructor Videos for the Four Treatment Groups*



High-Definition, Eye-Level Angle  
(H.264 1920x1080, 20 Mbps, 44.1 kHz)



Low-Resolution, Eye-Level Angle  
(H.264 320x240, 225 Kbps, 6 kHz)



High-Definition, High Camera Angle  
(H.264 1920x1080, 20 Mbps, 44.1 kHz)



Low-Resolution, High Camera Angle  
(H.264 320x240, 225 Kbps, 6 kHz)

*Note.* The instructor video used in each of the four treatment groups varied the video resolution and the instructor's ability to maintain virtual eye-contact with the camera and with online students.

The virtual classroom used for these experiments was a video conferencing room designed, maintained, and actively used by the university's distance learning program. The classroom has four rows of tables arranged in a rectangle, for a total of 16 seats. Participants were able to self-select their seat during the procedure, and the distribution of students within the classroom was documented by the researchers during each meeting. Two 52-inch (132 cm) LCD displays were located at the front of the room and were used to show the instructional videos during each of the four viewing sessions. These displays were mounted 56 inches (142.2 cm) above the floor for optimum viewing. Seating was arranged such that all participants were within 45-degrees of one of the displays (Niemeyer, 2003). Participants also sat within 10 to 30 feet (304.8 cm to 914.4 cm) away from the front of one of the displays. These dimensions are within the minimal and maximum seating distances from a 52-inch display as described by previous research studies and best practices (Allen et al., 1996; Niemeyer, 2003). Figure 2 illustrates the layout of the virtual classroom used in this experiment.



## Figure 2

### *Design Layout of the Virtual Classroom*



*Note.* The design and layout of the virtual classroom helped ensure that all research participants had a clear view of the instructor's video.

## Instruments

McCroskey's Source Credibility Measure was used to evaluate the first research question (McCroskey & Teven, 1999). This tool measures how study participants perceived the credibility of a communication source, or the instructor in the video, and was implemented on a 7-point Likert Scale. This instrument is based on earlier instruments such as the Semantic Differential Scale for Dimensions of Source Credibility for Spouses and Peers used in previous research studies that focused on the use of mass media to communicate the credibility of presenters (McCain et al., 1977; McCroskey et al., 1974; Jayasinghe et al., 1997; McCroskey & Jenson, 1975). The revised version recommends how to score and present 18 indicators such as the learner's description of the instructor's Competence (e.g., intelligent/unintelligent, inexpert/expert), Goodwill (e.g., self-centered/not self-centered, concerned/unconcerned) and Trustworthiness (e.g., untrustworthy/trustworthy, and unethical/ethical). The internal reliability alpha's of three dimensions of the Source Credibility Measure resulted in 0.78 for Competence, 0.89 for Goodwill, and 0.92 for Trustworthiness (McCroskey & Teven, 1999). McCroskey and Teven (1999) also found the combined alpha when measuring all three of these dimensions as an overall source credibility measured

a reliable 0.94.

The second research question was evaluated with Anderson's perceived General Immediacy Scale which measures the learner's assessment of the immediacy of their teacher based on their perceived reduction of psychological distance (Anderson, 1979). The specific items used to assess the teacher included the participants' agreement or disagreement of the immediacy of the instructor's teaching style, such as their rating of the teacher as cold or warm, friendly or unfriendly, and close or distant. The items in this instrument account for verbal and nonverbal communication cues, such as mannerism and eye-contact, and was also implemented on a 7-point Likert Scale. The internal reliability of this scale using Nunnally's internal reliability formula was measured at 0.96 (Anderson, 1979).

## **Procedures**

If students agreed to participate after reading the description of the study they clicked on a "yes I agree" icon, selected one of the treatment meeting times, and gave basic demographic information. Collected data included age, gender, academic status (e.g. freshman, senior, graduate student, etc.), degree or major, and experience taking a distance learning course. Students visited the conference room on their scheduled day and times and viewed one of the videos on the classroom displays. Students then completed the Source Credibility Measure and the General Immediacy instruments. Participants were given a \$5 Starbucks gift card after they completed their questionnaire booklets.

## **Results**

### **Instructor Credibility**

A 2x2 analysis of variance was conducted to determine the influence of the two independent variables (camera resolution and camera angle) on student perceptions of instructor credibility using McCroskey's Source Credibility Measure. The main effect of camera angle, with an F ratio of  $F(1,104) = 6.53$ ,  $p < .05$ , resulted in a significant difference between treatment groups. The students who viewed the eye-level versions rated the credibility of the instructor higher ( $M = 5.45$ ,  $SD = .86$ ) than the students who viewed the high-angle version ( $M = 5.05$ ,  $SD = .74$ ). The main effect of camera resolution, with an F ratio of  $F(1,104) = .65$ ,  $p > .05$ , did not result in a significant difference between treatment groups. The students who viewed the high-definition version rated the credibility of the

instructor only slightly higher ( $M = 5.31$ ,  $SD = .87$ ) than the groups who viewed the lower resolution version ( $M = 5.17$ ,  $SD = .77$ ). The interaction effect between camera angle and camera resolution was not significant,  $F(1,104) = .09$ ,  $p > .05$ . The internal reliability analysis of the credibility instrument resulted in a Cronbach's Alpha of .90 in this study.

The Source Credibility tool measured perceptions of the credibility of the instructor in the video based on the three combined constructs of competence, goodwill, and trustworthiness (McCroskey & Teven, 1999). A deeper analysis of each construct indicates specific areas where perception varied due to camera angle.

The main effect of camera angle, with an F ratio of  $F(1,104) = 3.95$ ,  $p = .05$ , resulted in a significant difference between treatment groups in terms of perceived competence. The students who viewed the eye-level versions rated the competence, or subject matter expertise, of the instructor higher ( $M = 5.99$ ,  $SD = .87$ ) than the students who viewed the high-angle version ( $M = 5.66$ ,  $SD = .81$ ). The main effect of camera resolution, with an F ratio of  $F(1,104) = .34$ ,  $p > .05$ , did not result in a significant difference between treatment groups in terms of competence. The students who viewed the high-definition version rated the competence of the instructor only slightly higher ( $M = 5.86$ ,  $SD = .92$ ) than the groups who viewed the lower resolution version ( $M = 5.76$ ,  $SD = .79$ ). The interaction effect between camera angle and camera resolution was not significant,  $F(1,104) = .0001$ ,  $p > .05$  in terms of the student perception of instructor competence. The internal reliability analysis of the competence submeasure resulted in a Cronbach's Alpha of .75.

The main effect of camera angle, with an F ratio of  $F(1,104) = 8.77$ ,  $p < .05$ , resulted in a significant difference between treatment groups in terms of goodwill, or the perception of the instructor's concern for the students learning. The students who viewed the eye-level versions rated the goodwill of the instructor higher ( $M = 4.89$ ,  $SD = 1.01$ ) than the students who viewed the high-angle version ( $M = 4.32$ ,  $SD = .94$ ). The main effect of camera resolution, with an F ratio of  $F(1,104) = .77$ ,  $p > .05$ , did not result in a significant difference between treatment groups in terms of goodwill. The students who viewed the high-definition version rated the goodwill of the instructor only slightly higher ( $M = 4.68$ ,  $SD = 1.08$ ) than the groups who viewed the lower resolution version ( $M = 4.48$ ,  $SD = .95$ ). The interaction effect between camera angle and camera resolution was not significant,  $F(1,104) = .149$ ,  $p > .05$  in terms of the student perception of instructor goodwill. The internal reliability analysis of the goodwill submeasure resulted in a Cronbach's Alpha of .81.

The 2x2 analysis of variance for the trustworthiness construct did not yield any significant main effect or interaction differences between camera angle and camera resolution treatments. The internal reliability analysis of this submeasure resulted in a Cronbach's Alpha of .83.

## **Instructor Immediacy**

A 2x2 analysis of variance was conducted on the influence of the two independent variables (camera resolution and camera angle) on student perceptions of instructor immediacy using Anderson's perceived General Immediacy Scale. The main effect of camera angle, with an F ratio of  $F(1,104) = 8.95, p < .05$ , resulted in a significant difference between treatment groups. The students who viewed the eye-level versions rated the general immediacy of the instructor higher ( $M = 5.25, SD = 1.29$ ) than the students who viewed the high-angle version ( $M = 4.65, SD = 1.43$ ). The main effect of camera resolution, with an F ratio of  $F(1,104) = 2.43, p > .05$ , did not result in a significant difference between treatment groups. The students who viewed the high-definition versions rated the credibility of the instructor only slightly higher ( $M = 5.16, SD = 1.26$ ) than the groups who viewed the lower resolution versions ( $M = 4.27, SD = 1.53$ ). The interaction effect between camera angle and camera resolution was not significant,  $F(1,104) = 2.33, p > .05$ . The internal reliability analysis of the immediacy instrument resulted in a Cronbach's Alpha of .95 in this study.

## **Implications for Research and Application**

There are several interesting and applicable findings from these results. Students who viewed video created from the eye-level camera rated the instructor's credibility and immediacy higher than students who viewed video from the camera positioned above eye-level. The instructor was able to replicate eye-contact virtually by looking directly into the camera while being recorded. Thus, this camera was able to record any subtle eye movements that would nonverbally communicate credibility and immediacy cues to students. The camera positioned 15-degrees above line-of-sight would not have been able to record these cues. This 15-degree angle is not as pronounced as the 40-degree angle used in Jayasinghe et al. (1997), though the decreased credibility and immediacy response is similar. A deeper analysis did appear to show an impact of low-resolution (340x240) and high-definition (1920x1080) when combined with camera angle. The scenario where eye-level cameras record in high-definition does appear to communicate more information to students than cameras recording outside line-of-sight angles in lower resolutions. A similar study found that enhancing and creating 'warm'

learning environments using audio and video required additional resources, though the return in terms of increased immediacy and credibility was worth the investment (Dixon et al., 2017). Bandwidth restrictions and availability may prevent virtual classroom implementations from using high-definition capabilities in practical application. However, the findings of this study do show that there should be benefit from making network and bandwidth investments to support high quality video conferencing.

McCroskey's Source Credibility Measure averages the three related constructs of competence, goodwill, and trustworthiness (McCroskey & Teven, 1999). Resolution alone did not appear to have an impact on any of the three constructs, however, the camera angle did appear to influence two of the three submeasures. Participants who viewed the eye-level recorded videos perceived the presenter as more knowledgeable and considerate than students who viewed the high-angle camera recordings. This finding suggests that students were able to gather information via eye-contact that indicated the instructor's knowledge of the subject matter and confidence speaking on the subject. This finding also suggests that the information conveyed by the instructor's eye contact was also enough to cause the participants to think about how the instructor enjoyed teaching and level of caring about the learning of her students. Several student remarks in the optional comments section of the survey responded that the video may have been too short to accurately gauge the trustworthiness of the instructor. Video modules in future studies longer than 20 minutes may give students more information to make this determination. Also, a larger treatment sample in the four individual groups may have revealed possible significant differences on these three individual credibility constructs based on video resolution.

Further insights into instructor immediacy were available when the data were analyzed based on the combined factors of camera placement and video resolution. Similar to the overall credibility findings, the combination of high-definition and eye-level camera placement resulted in the highest levels of perceived immediacy. Other recent research has also indicated that immediacy can be improved in distance learning and virtual environments by using technology to decrease perceptions of transactional distance and increase engagement and student satisfaction (Ghamdi et al., 2017). Adult distance learners do not want to be isolated; they appear to prefer contact with the instructor. The technology's ability to encode, transmit, and decode verbal and nonverbal communication from the instructor defines that instructor's social presence in a real-time web or video conferencing context. Social presence is the extent to which a person, in this case a distance learning student, perceives another person, the instructor, as real (Baker & Woods, 2004; Gunawardena & Zittle, 1997). Thus,

the immediacy or social presence of the instructor is the student's perception of communicating with a live person. This awareness of an instructor's immediacy decreases the learner's sense of distance from the instructor and increases feelings of being a member of the class, despite actual geographic separation (Baker, 2010; Baker & Woods, 2004; Hackman & Walker, 1990). These studies found a positive correlation between student perceived satisfaction and virtual classroom design. Specifically, classroom design aspects such as high quality audio and video, increased the social presence of the instructor. The more genuine the reproduction and inclusion of the instructor's nonverbal communication, the more positive should be the effect on the distance learning program's equivalency to traditional live classroom courses.

These immediacy findings could also relate to research into online communities of inquiry. A Community of Inquiry is a framework that can be used to describe the effectiveness of computer conferencing, and describes an optimal educational experience as a function of social presence, teacher presence, and cognitive presence (Garrison et al., 2000; 2010). Credibility and immediacy of an instructor may relate to and map to the social presence, teacher presence, and cognitive presence interaction points in the community of inquiry model. Similarly, fostering instructor immediacy with video can enhance information recall, perceived learning, and decrease cognitive effort (Wang & Antonenko, 2017). Multimedia, especially video, can also foster affective learning and motivation (Mayer & Estrella, 2014). Increasing teaching and social presence through credibility and immediacy may help instructors and instructional designers create and improve the educational experience in online environments.

## Conclusion

There are several design best practices and areas for future research that can be derived from this experiment. A key best practice for instructors and instructional designers is to try to design virtual classroom layouts that allow instructors to maintain natural eye-contact with live or recording cameras to foster immediacy and enhance credibility. While it does appear that the instructor's perceived credibility and immediacy are enhanced by the eye-level positioning of virtual classroom cameras, the resolution of the virtual environment appears to have much less of an impact. Although the lower resolution versions appeared 'more blurry' than the high-definition video versions in the present study, the students were still able to perceive the virtual presence of the instructor.

There are practical limitations when designing a virtual classroom environment. However, designers should try to integrate eye-level cameras into the designs as

best they can to enhance students' perceptions of the instructor's credibility and immediacy. While this study focused on emulating a live virtual classroom, these findings should also be applicable to asynchronous video environments. Instructors can enhance their credibility and immediacy when recording modules for online classes when they pay particular attention to the placement of their camera when recording. These results could also extend into informal and formal live environments with web cameras; credibility and immediacy can be improved by not avoiding the camera, and by instead using the camera as a communication tool. Students participating in a virtual class beyond 20 minutes may result in more conclusive results, especially video based classes where community of inquiry measures can be used to also gauge social, instructor, and content presence. Along with increasing the length of the video, and the number of videos, another future research project could look to replicate this study using 4K or 8K resolution cameras, files, and displays. Would the added information of 'ultra-high-definition' technology, beyond 1080 high-definition, even further influence credibility and immediacy?

The results of this virtual classroom study could also extend to online video and multimedia presentations for mobile devices. Online environments can be extremely isolating for distance and e-learning students. One potential way to reduce this sense of isolation is to decrease the psychological distance between students and instructors. The inclusion of instructor video could potentially reduce this sense of isolation and enhance instructor and social presence. Other future studies could include integration of presentation slides, live interactive video, different subject matter, and measures of learning effectiveness such as problem solving and application post-tests.

While there are numerous directions that can be explored in future experiments, the present study confirms previous research and helps define contemporary best practices. This study found support for enhancing virtual classroom systems using higher video resolutions and for the optimal placement of cameras to record the nonverbal subtleties communicated via eye-to-eye discussions. Designing systems that allow instructors to maintain eye-contact with students is an effective communication approach that can enhance the social presence aspects of credibility and immediacy.

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# Importance of Instructional Designers in Online Higher Education

Julia E. Hart

*When assigned to develop higher education courses for the online learning format, faculty members and instructional designers (IDs) are often assigned to work together as a course development team. Sometimes, faculty members may be unaware of the field of instructional design and the valuable knowledge IDs can bring to a course development project. As a result, they may not realize that the advice and assistance IDs offer can help bring their courses to the next level. IDs possess specific knowledge of learning theories and instructional design models that are the keys to improving the quality of instruction within online higher education courses. When such specialized knowledge is not utilized, the result can be low-level courses in which students are unsuccessful. Therefore, it is important for individuals within academia to begin to understand the key role IDs play in improving the quality of online higher education courses. IDs often are responsible for helping faculty members write course objectives, create engaging assignments for the online format, and develop methods for presenting course information to learners. This paper outlines research and information gathered from 12 research study participants that details the important role IDs play in course production and seeks to bring new knowledge about instructional design to the forefront of the field. IDs are a valuable resource within higher education, and the expectation is that others within the field of academia will gain a clearer understanding about the need for IDs to be involved. Such an understanding can lead to a smoother course development process and a higher quality online course result. In addition to discussing the role of IDs in higher education, the 12 research study participants shared their strategies for successfully working with faculty members to develop high-quality courses within higher education.*

When assigned to develop higher education courses for the online learning format, faculty members and instructional designers (IDs) are often assigned to work together as a course development team. Sometimes, faculty members may be unaware of the field of instructional design and the valuable knowledge IDs can bring to a course development project. As a result, they may not realize that the advice and assistance IDs offer can help bring the faculty members' courses to the next level. IDs possess specific knowledge of learning theories and instructional design models that are the keys to improving the quality of instruction within online higher education courses. When such specialized knowledge is not utilized, the result can be low-level courses in which students are unsuccessful. Therefore, it is important for individuals within academia to begin to understand the key role IDs play in improving the quality of online higher education courses.

This paper outlines research and information gathered from 12 research study participants that details the important role IDs play in course production and seeks to bring new knowledge about instructional design to the forefront of the field. IDs are a valuable resource within higher education, and the expectation is that others within the field of academia will gain a clearer understanding about the need for IDs to be involved. Such an understanding can lead to a smoother course development process and a higher quality online course result. In addition to discussing the role of IDs in higher education, the 12 research study participants shared their strategies for successfully working with faculty members to develop high-quality courses within higher education.

## **Importance of Quality in Higher Education**

Mykota (2013) stated that over the past few years there has been a large increase in the number of North American students enrolled in fully online education courses. The leadership teams within most higher education institutions now believe that their futures depend on their ability to provide quality online learning environments (Mykota, 2013). Allen and Seaman (2011, 2016), however, suggested that a large amount of lower quality courses being produced for the online format has begun to undermine the value of the educational opportunities afforded by the Internet. Therefore, it is important to ensure that each course produced is of the highest quality possible.

What exactly is considered a high-quality online course? A high-quality online course can be defined as a course in which students perform well, are motivated to learn, and remain engaged in their coursework (Cole et al., 2014). Students must feel a sense of satisfaction and must believe that they have truly learned something valuable when they complete a course for the course to be considered

high-quality (Cole et al., 2014). Research has shown that a successful online course development project involves not only a faculty member but also an ID who has knowledge of the pedagogy involved in designing a course for the online format (Brown et al., 2013; Outlaw et al., 2017).

## **IDs in Higher Education**

While IDs may not know much about fire science or criminal justice, they are specially trained to take the expert content given to them by faculty members and transform it into learning experiences that will capture students' attention so that they can achieve the knowledge and skills necessary to be successful in their chosen careers. IDs perform many different duties when working with faculty members to design and develop courses. They take on many of the behind-the-scenes responsibilities within the course production that sometimes faculty members are unaware of so that they can focus on providing the expert content that students need to be successful. For example, IDs have been known to transcribe videos and audio files, develop various forms of media for courses, and even load courses into learning management systems.

However, there is much more to being an ID than those types of activities suggest. IDs today possess specific knowledge of learning theories and instructional design models that are the keys to improving the quality of online higher education courses (Shaw, 2012). They often are responsible for helping faculty SMEs write course objectives, create engaging assignments for the online format, and develop methods for presenting course information to learners (Hixon, 2008). IDs are also often instrumental in helping higher education faculty negotiate and reduce the transactional distance that often occurs in online courses (Lunce & Huang, 2013). Transactional distance involves the misunderstanding and miscommunication that can occur between a learner and his or her professor due to the two parties being physically separated from one another (Lunce & Huang, 2013).

Brigance (2011) stated that higher education institutions offering online learning need individuals with a clear understanding of the direction and approach that needs to be taken to produce high-quality online courses and that IDs possess just that type of understanding. IDs possess the following attributes that are necessary for bringing online courses to the highest levels:

- solid designer foundation in instructional and learning theories,
- an understanding of the cognitive process of learning,
- ability to utilize research to inform practice,
- competency in multimedia and online educational formats, and

- commitment to perpetual learning and readiness for challenges along the way (Brigance, 2011; Fyle et al., 2012)

IDs understand the need to keep up with a constantly changing field and the importance of working collaboratively with faculty members (Anderson, 2012; Brigance, 2011; Fyle et al., 2012). Some of the skills IDs possess that lend themselves well to improving the quality of online courses they help to produce include the following:

- possession of effective communication skills,
- knowledge of the need to constantly update instructional design skills,
- ability to apply current research and theory, and
- ability to identify and resolve ethical and legal issues (Anderson, 2012; Brigance, 2011; Fyle et al., 2012)

In a recently completed research study, 12 IDs who had worked within the field of online higher education for at least two years and had worked with faculty members to produce courses at least five times were interviewed. These IDs were asked if they believed that IDs were important within the field of higher education and, if so, how. Each of the participants agreed that IDs are important because they truly make a difference in the quality of the courses being produced for the online format. IDs bring a specialized knowledge of instructional theories and how people learn to the table of online course design. Participants additionally stated that IDs help faculty members present course material in more engaging ways that can help students better absorb the subject matter. IDs can also help faculty members keep the level of the students' knowledge about the subject matter in mind and can bring fresh eyes and new perspectives to course design that can help to improve how students experience online courses within higher education institutions. Several participants mentioned that faculty members often do not realize that the way a course is presented in a traditional classroom must change when it is transferred to an online format, and IDs bring a wealth of knowledge regarding such a change in pedagogy.

All but one of the participants touched on the fact that while faculty members are experts in their own fields of study, many do not have the background in education that IDs do. As a result, it can sometimes be difficult for faculty members to present their subject matter knowledge in ways that students can truly comprehend, especially in the online format, which can reduce the quality of the resulting course. One issue that a participant raised was that traditional faculty in higher education, while being trained specifically about their content, are often not trained as educators. IDs can help faculty members translate their knowledge into a learning environment in which students can learn and achieve the outcomes



of the course. In addition, the participant indicated that IDs are necessary to show the faculty different aspects of teaching and to help them deliver their content in ways that students can truly learn and understand, which is a hallmark of a high-quality online course.

Other participants described in more detail the specialized knowledge that IDs bring to an online course development project, which include the following:

- Trained to specifically think about the student experience as they are working to develop online courses.
- Ensure that the subject matter is presented at the proper level so that students can absorb the material, especially if it is the first time they have ever encountered a topic.
- Ensure sure that instructions for assignments are clearly written so that students understand what is being asked of them.
- Ensure that all the course material aligns with the course outcomes or objectives.
- Retain consistency in how courses are presented in their institutions because they know that students are more successful in a course in which they know where to locate specific files or content that they need to complete their assignments.
- Bring a new perspective to the process of course design. IDs do not have an emotional or personal investment in a specific course development method and can look at course material with a different, more detailed, eye. IDs are better able to see the issues that are keeping students from being successful in the course and can offer suggestions to faculty members that can help them improve their courses.

## **Strategies for Helping Others Realize the Importance of IDs**

The outcomes of this study indicate that the development of a high-quality course for the online higher education format requires the expertise of more than one individual as well requiring the use of different types of teaching and learning strategies (Chao et al., 2010; Vandenhouten et al., 2014). Faculty members bring an extensive knowledge of the subject matter covered in a course, and IDs bring specialized knowledge of how to present the subject matter in such a way that it helps students achieve the outcomes and goals of the course. To produce a high-quality course, these two individuals must be able to collaborate well with one

another and form a cohesive team based on mutual respect for one another's time and expertise.

The IDs interviewed for this study indicated that many of the issues that they have with faculty members stem from the fact that faculty members are often not aware of what IDs do and what benefits they can bring to online course design and to the field of higher education in general. The belief of study participants and researchers alike is that more information needs to be disseminated regarding the significant contributions and advancements that have been brought into the field of higher education through the work of IDs (Afsaneh, 2014).

The findings of this study also indicate that IDs and faculty members should make more of an effort to communicate with one another as communication appears to be the key to establishing a true course development partnership (Anderson, 2012; Ashbaugh, 2013; Campbell et al., 2009). A successful partnership between a faculty member and an ID can improve the quality of the resulting course and demonstrates how important an ID can be within the field of higher education. Strategies that IDs can use to work successfully with faculty members are listed in Table 1. These strategies have been gleaned from both a study of the literature and the responses from this study's participants.

**Table 1**

*Strategies for Working with Faculty Members*

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**An instructional designer should schedule an initial meeting with the faculty member before the actual course design work begins (Tessmer, 1993). This gives each individual an opportunity to get to know one another, learn about each other's working styles and preferences, and hammer out issues regarding deadlines and methods for meeting the goals and outcomes of the course. Doing this will hopefully avoid conflicts down the road.**

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The instructional designer and the faculty member should maintain regular communication with one another throughout the course development process. Several participants mentioned that conflicts arose when faculty members and IDs lost touch with one another or when deadlines were not met.

When offering feedback to faculty members, it is often better for an instructional designer to do so through a phone call or face-to-face so that the two parties have a chance to discuss the feedback together. This allows the instructional designer to explain more clearly why he or she thinks a change should be made, and it allows the faculty member the chance to give his or her opinion about the change. There are then no misunderstandings about the intent of the feedback, and each person has a chance to weigh in on the issue at hand, reducing the chance of conflict down the road.

IDs should present themselves as helpers or as individuals who can complement the abilities of faculty members. By doing so, IDs are more likely to be seen as equal partners in course production, which can help to raise their credibility in the eyes of higher education faculty.

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IDs should make every effort to build a culture of teamwork with faculty members because it is teamwork and collaboration that will make the courses being produced the best they can be. See Table 2 below for some ideas about how to create a culture of teamwork with faculty members.

**Table 2**

*Creating a Culture of Teamwork*

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**IDs should clearly communicate their role and purpose in the course development process.**

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IDs should put together a list of services that they can perform for faculty members and maybe even have a portfolio online where they can show faculty members examples of some of the work they have done and how this work improved the quality of the courses on which the IDs worked.

IDs should listen to the ideas that faculty members have for their courses and advise them on how an instructional designer can help them achieve those ideas.

IDs should have a thick skin and be prepared for faculty members not to accept the latest and greatest instructional technique that an instructional designer is suggesting. IDs should be prepared to compromise with faculty members when necessary.

IDs should have knowledge of their university's instructional design processes and have documentation in place so that they are always ready to answer any questions faculty members may have during course production.

IDs should let faculty members know that they are there to guide the faculty members through the course development project, not dictate to them.

Above all, IDs and faculty members should together consider the needs of their students first and foremost and work together to ensure that all of the courses they develop are of the highest quality and provide a unique and fulfilling learning experience for all students.

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## **Conclusion**

High-quality online higher education courses are clearly the result of true collaboration and teamwork between faculty members and IDs, and more of an effort should be made by higher education leadership to promote this partnership in the future (Kotter, 2008; Kowch, 2009). Participants and researchers believe that if more of an effort is made to clearly establish the roles and responsibilities of faculty members and IDs to course development projects, conflicts will diminish, and better courses will result which, in turn, will lead to a better outcome for students and more growth in the field of online higher education.

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# **Standardization of Forms, Templates, and Processes for Implementing an E-Learning Program with a Decentralized Instructional Design Team**

James Holcomb & Tomika W. Greer

*The purpose of this project was to implement an e-learning program for a decentralized instructional design team. The team is decentralized by department, location, and reporting structure. Therefore, successful collaboration among the team members requires the implementation of standards and processes to ensure a consistent level of quality in the e-learning instructional content. This consistency was introduced and maintained through the ADDIE instructional design model; and development and implementation of consistent software templates, writing standards, forms, and processes.*

E-learning is a category of instruction in which digital devices (including computers, tablets, and mobile phones) are used to deliver the instructional materials, engage the learners, and support intended learning outcomes (Clark & Meyer, 2016; Davis & Wong, 2007). Effective instructional design of e-learning courses is more important for achieving learning outcomes than the media that is chosen for instructional delivery (Mayer, 2003). Therefore, to increase the effectiveness of e-learning, the focus should be placed on instructional design.

In a 2017 survey of 546 talent development leaders, the Association of Talent Development (Robinson, 2017) concluded that 88% of the organizations offered e-Learning in their training and development portfolios, with higher performing

organizations employing e-learning more than lower performing organizations. Of additional note in the ATD report (Robinson, 2017) were the common barriers to e-learning implementation, which included lack of training in general instructional design and e-learning design, in particular.

In this article, we share a case study of the first author's experience and results of implementing an e-learning training program for instructional designers in an organization with a decentralized instructional design team. We focus on the process of standardizing authoring software templates, writing standards, forms, and the process for designing e-learning across the organization. Subsequently, we evaluated the training program and suggested future actions for maturing the e-learning program.

## **Company Background**

Company A is a leading manufacturer of heating, ventilation and air conditioning (HVAC) equipment with sales throughout the United States and Canada. The company had four manufacturing plants, two in Texas and two in Tennessee, as well as over 200 retail branches that served local dealers and distributors. In 2012, Company A was acquired by Company B, which was a foreign-based HVAC organization that had a strong global presence except in the United States. At the time of the acquisition, the North American division of Company B was using a learning management system (LMS) to track and report data for classroom and webinar training. The few e-learning offerings were authored in the home country and translated for English-speaking employees in the United States.

In 2015, Company A was encouraged to internally adopt and utilize the LMS for training its employees. A Learning and Development (L&D) team was established within the Human Resources (HR) department to oversee the LMS implementation and the development of new e-learning content. In 2016, the internal LMS—called The Compass—was launched.

## **Problem Statement**

The Compass was launched using e-learning content from external vendors, but there was a desire to create custom courses that addressed the specific learning needs of the employees in Company A. A Content Manager (CM) joined the L&D team with the task of designing and developing new e-learning content, but the demand for content quickly surpassed the capacity of a single person. Other training groups within Company A were willing to create their own e-learning

content, but they lacked the knowledge and experience required for e-learning development. In addition, each training group had its own style and format for the creation of training materials, which lacked consistency and an organizational standard. A common knowledge of e-learning design and development did not exist, so no e-learning content would be developed without a structured plan.

The CM was tasked with creating an e-learning design and development program that would allow various groups within the organization to develop their own learning content, while maintaining an organization-wide standard and quality of instruction. The decentralized instructional designers in the various departments were experienced in creating instructional content for classroom and webinar training but had no experience in the design and development of e-learning content.

Therefore, the purpose of this project was to create an e-learning program at Company A that would allow instructional designers across the organization to develop instructional content that is consistently formatted, instructionally sound, and SCORM-compliant for the LMS. The goal of the program was to standardize the entire instructional design process from initial contact with a subject matter expert (SME) to evaluation of the final product.

## **Conceptual Framework**

The design of an e-learning course can enhance or hinder the retention of information by the learner (Mayer, 2003; Sorden, 2005). An effective e-learning course should be designed to optimize the cognitive abilities of the learner by tailoring the instructional materials to minimize extraneous cognitive processing and promote essential cognitive processing (Clark & Meyer, 2016; Mayer & Moreno, 2003). Such a design requires an understanding of how individuals analyze and retain information during the learning process (Sorden, 2005).

The project at Company A was based on the application of the Cognitive Learning Theory (Meyer & Moreno, 2003) to e-learning design. Moreover, like many other organizations (Klein & Kelly, 2018), the L&D team at Company A uses the ADDIE model as a structured model of instructional design for all training design and development projects. Finally, the Capability Maturity Model (Marshall, 2001) formed a basis for evaluating the resulting training program.

## **Cognitive Learning Theory for E-Learning**

Multimedia learning is a form of e-learning that involves information acquisition



and/or knowledge construction when the instruction is presented using words and pictures together (Mayer, 2002; Mayer & Moreno, 2003). In multimedia learning, multimedia narration and graphical images produce verbal and visual mental representations, which integrate with prior knowledge to construct new knowledge (Kirschner, 2002; Mayer & Moreno, 2003). This concept is outlined in the Cognitive Theory of Multimedia Learning and is based on four assumptions (Sweller et al., 1998). The first assumption is that a person's short-term memory includes subsystems for processing auditory and visual information (Mayer & Moreno, 2003). The second assumption is that each subsystem of the short-term memory has a limited capacity (Miller, 1956). The third assumption is that humans can learn when they are able to attend to relevant incoming information, organize that information, and integrate the information into existing knowledge (Mayer & Moreno, 2003). The fourth assumption states that learning connections can only be made if the visual and verbal information in the short-term memory correspond to each other (Sorden, 2005).

As outlined in the Cognitive Theory of Multimedia Learning (Mayer & Moreno, 2003; Sorden, 2005), these four assumptions translate into the following practical applications for e-learning design and development:

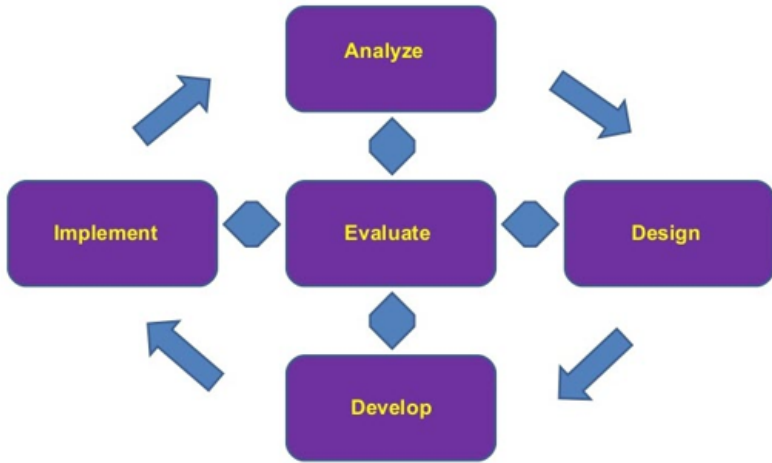
- Use a combination of text and images that share a mutual relevance (Mayer, 2002).
- Present information in smaller "chunks" to avoid cognitive overload due to the limited capacity of the short-term memory (Meyer & Moreno, 2003).
- Design and develop instructional materials that are relevant and meaningful to the learner to enhance learning (Sorden, 2005).
- Create instruction that calls upon previously developed schema (from long-term memory) to reduce the cognitive load on the short-term memory (Kirschner, 2002).

## **ADDIE Model**

The ADDIE model (Schlegel, 1995) of instructional design was adopted as the standard for the design and development of instructional content at Company A. The ADDIE model implies a progression of five phases of instructional design: Analyze, Design, Develop, Implement, and Evaluate. In the project described herein, the CM executed ADDIE as shown in Figure 1.

### **Figure 1**

*ADDIE Model of Instructional Design*



As executed in Company A, the first four phases of ADDIE are represented as a cycle with the Evaluate phase continuously applied to all other phases to ensure the learning program meets the required objectives. The ongoing evaluation of the current project was based on the Capability Maturity Model (Paulk et al., 1993).

### Capability Maturity Model

A high-quality e-learning program matures over time as the participants and stakeholders in the program adapt and change. This maturing process can be charted using a Capability Maturity Model (CMM), which tracks the progress of a learning program from inception to full maturity. Capability maturity models were developed to reflect the idea that organizations engaging in these types of improvement actions consciously and repeatedly were more effective than organization that did not do so (Marshall, 2001). A CMM is composed of five levels of maturity that create a foundation for continuous performance improvement (Marshall & Mitchell, 2002; Paulk et al., 1993):

1. **Initial:** Process is at an ad hoc starting point.
2. **Repeatable:** Process is documented and can potentially be repeated.
3. **Defined:** Process is confirmed, documented, and standardized.
4. **Managed:** Detailed measures of the process and product quality are collected and controlled.
5. **Optimizing:** Continuous process improvement is facilitated by feedback from the process and new ideas.

Marshall and Mitchell (2002) adapted the standard CMM to e-learning to create an e-Learning Maturity Model (eMM) that can be used as a framework to improve e-Learning processes. The five levels of the CMM were adjusted to better align with the principles of e-learning design and development, which resulted in the following levels:

1. **Initial:** No formal processes exist.
2. **Repeatable:** Clear objectives for e-learning with deliberate process established.
3. **Defined:** Defined, structured, and integrated process for learning.
4. **Managed:** Ensuring the quality of both the e-learning resources and student learning outcomes as an organizational approach.
5. **Optimizing:** Continual improvement of educational effectiveness.

For each level of the eMM, key outcomes are assessed in four areas: *Student Learning*, *Resource Creation*, *Project Support*, and *Organization*. The maturity level of each of these areas also increases across the five levels of the eMM.

## Method

In the field of instructional design, “the current focus is on the design and utilization of both instructional and non-instructional processes and resources to improve learning and performance” (Klein & Kelly, 2018, p. 225). Accordingly, to standardize e-learning design and development across Company A, the content manager determined that several processes, forms, templates, and standards would need to be developed. The fundamental tenets of Cognitive Learning Theory (Mayer & Moreno, 2003) could be achieved for Company A by implementing writing standards, software templates, an internal instructional design process, and forms for gathering requirements. The focus on these four items represents the five phases of the ADDIE model and when used properly, they would help Company A establish consistency in the e-learning courses produced across the entire decentralized instructional design team.

## Standardized Writing Style for E-Learning Design and Development

Writing standards have implications for the design and development phases of the ADDIE model. The underlying foundation of effective e-learning design and development rests in the concepts of entering a cognitive state of flow (Davis & Wong, 2007) and efficient cognitive processing (Paas et al., 2003). These ideals are partially attained through the consistent use of instructional text and an e-

learning interface and formatting structure that remains the same, regardless of the course or instructional designer. To achieve consistent text, the CM sought a set of writing standards from the organization. The standards provided were very limited and not in use by much of the organization, so the CM deemed it necessary to create a functional set of writing standards for the e-learning program, which would follow the Microsoft Manual of Style 4th edition.

## **Standardized Software Templates for E-Learning Design and Development**

Authoring software is commonly used to develop e-learning courses as evidenced by Klein and Kelly's (2018, p. 231) finding that "knowledge and experience with e-learning authoring software such as Captivate, Presenter, Storyline, or Lectora" is the third most common competency identified in job announcements for instructional designers. Software templates can be used to create a consistent learner experience from slide-to-slide and from course-to-course. The learner should not be focused on the design of the course, but rather on the content embedded within the course. A properly designed template should be leveraged during the design and development phases of the ADDIE model to reduce the intrinsic cognitive load of the learner.

When this project began, the CM was using Lectora to build e-learning courses. Course builders in other departments were using authoring software entitled Claro, which is associated with the LMS. The CM developed an e-learning template for Lectora that met all standards of cognitive efficiency and received approval from the project sponsor and an executive stakeholder. The template for Claro required the development of two templates due to the nature of the software. Claro imports a presentation from PowerPoint, which can then be further enhanced. A basic PowerPoint presentation file that is specific to Claro was created by the CM. The CM also created a template in Claro that incorporated the required branding standards of the company. There are limitations within the Claro software regarding navigation, so a less than desired outcome had to be accepted. The Claro templates were also approved by the project sponsor and executive stakeholder.

Each of the authoring software in use required a basic development template that incorporated required branding standards, such as company colors, logos and copyright language. Additional requirements included a consistent navigation structure with controls and are easy to see and use. The intent of the template design is to make all of the colors, borders, and controls fade into the background so the learner is focused on the instructional content rather than extraneous

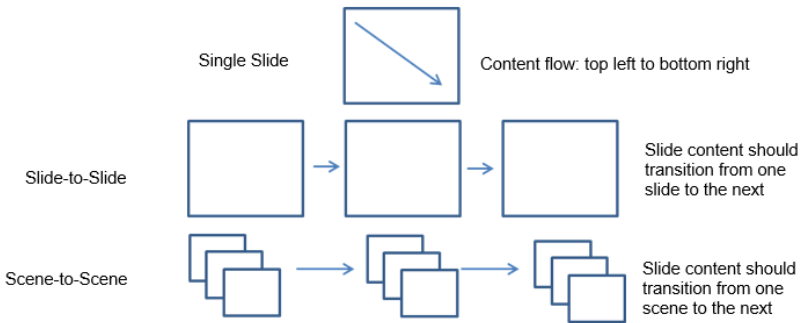
aspects of the course.

As the project progressed, two instructional designers were added to the L&D team in the HR department. These designers did not have working knowledge of Lectora or Claro. Instead, they were experienced in Articulate Storyline - a third authoring software. Because these designers needed a template in Storyline to perform their duties, the CM added an additional template creation to the project schedule. Under the guidance of the CM, the new instructional designers created a working template for Storyline that allows multiple branded courses to be published from a single file. This feature allows the designers to create a single course containing instructional content that publishes for multiple brands through the use of variables for the company name and associated images.

The software templates allow the flow of content in all courses to meet the pattern expectations of the learner. Each slide of a course has a specified flow of content from slide to slide, and from section to section, supporting the coherence effect of e-learning (Mayer, 2002). Figure 2 was developed to assist the course designers with content design and development.

### Figure 2

*Illustration for Standard Content Flow*



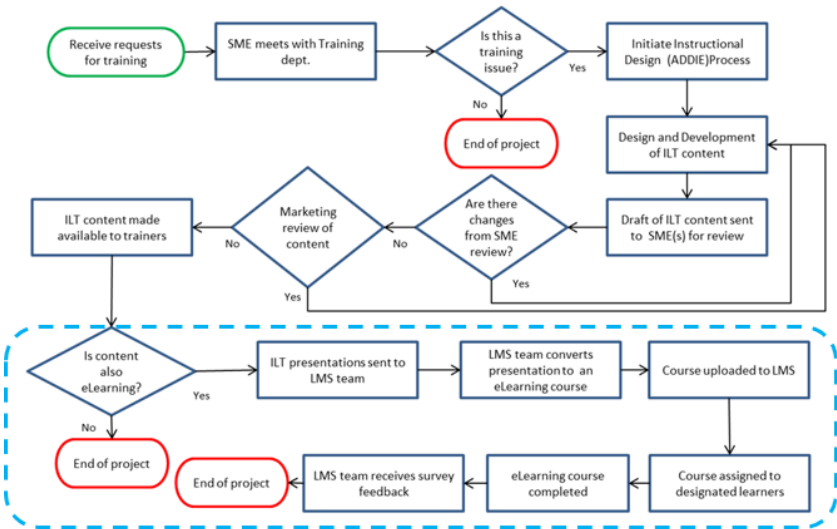
## Standardized E-Learning Instructional Design Process

The newly created instructional design processes are applicable for all phases of the ADDIE model and are the nucleus of the standardization across the organization. Prior to the initiation of the project, the organization had

instructional designers and instructors who each created classroom training materials on their own. The instructional designers had their own process that followed the phases of the ADDIE model. The CM augmented this established process to incorporate the additional steps of e-learning development and implementation, as shown in Figure 3. The area enclosed in the dashed blue line contains the steps that were added to the existing instructional design process. The CM acquired approval for this process from the project sponsor. All e-learning content developed in Company A must follow this new process.

**Figure 3**

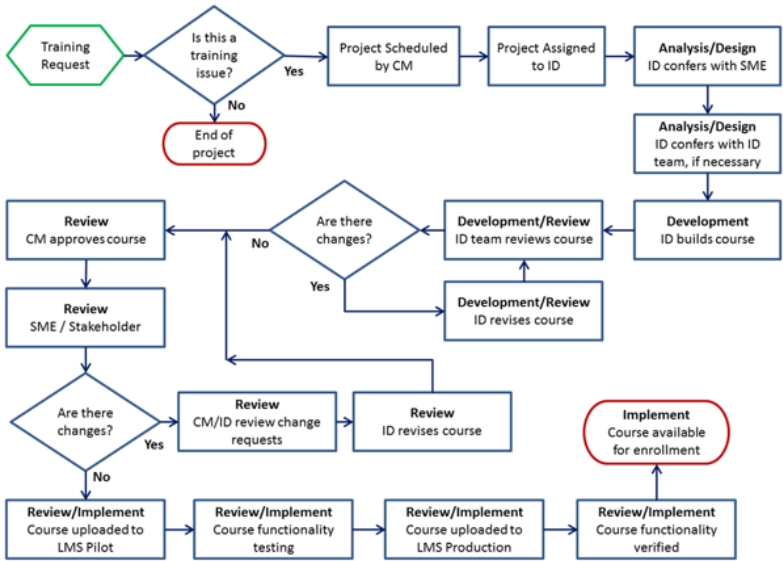
*Augmented Instructional Design Process*



The addition of L&D instructional designers in the HR department required the development of an internal process for the development and review of e-learning content. Figure 4 is an illustration of the process for e-learning design and development within the L&D team, along with an internal process for the review of content.

**Figure 4**

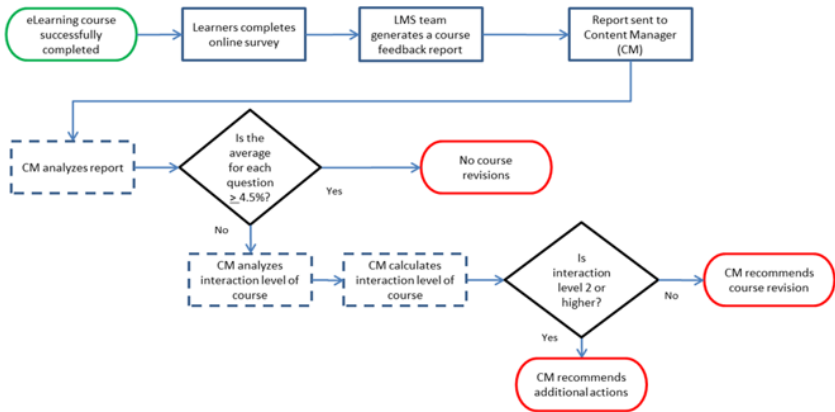
*Revised Instructional Design Process (L&D Team)*



To standardize the evaluation phase a survey with uniform evaluation questions was included in every course in the LMS. Figure 5 contains details for the evaluation process of an e-learning course at Company A. The CM is responsible for implementing the steps of the evaluation process.

**Figure 5**

*E-Learning Course Evaluation Process*



## Standardized Forms for Gathering Requirements

Creation of learning activities in the LMS can be time consuming, especially if all details are not included with the initial request. Effective collaboration and communication are vital for success even in the analysis phase of an instructional design project (Klein & Kelly, 2018). A string of email threads and/or phone calls to clarify design and development specifications results in wasted time and possible errors. To remedy this situation, the CM met with the CM and LMS team to determine the types of required forms and the necessary information to be gathered on each form. The new requirements gathering forms allow for stakeholders to efficiently and accurately initiate the analysis phase of the ADDIE model. The three forms determined to be required were the Course Creation Request, the Section Request, and the Assignment Request forms.

The *Course Creation Request* form is applicable to any type of training to be created in the LMS, including e-learning courses. This form contains the basic information listed in the LMS about the training. The *Section Request* form serves a dual purpose. This form is used to create a classroom training course in the LMS, which included details such as Location and the Number of Students. Once a classroom course is created in the LMS, sections of this course must be created with specific dates and times. This form can be used to add sections to an existing classroom course, as well as create a new classroom course and sections. The *Assignment Request* form contains information about the learners and the training activities to be assigned. This form is the most widely used as assignments are requested at a higher rate than courses are created.



All forms were initially created in a PDF format and sent to the requestors as necessary. The requestors had difficulty submitting the forms and complained about the number of separate documents, so the forms were reformatted into a single Excel document. All forms are included on separate worksheets and instructions for completing the forms are also included in the Excel file.

## **Training for New Standardized Elements**

The final stage of the e-learning program was training the decentralized instructional designers on the authoring software and basic e-learning principles. The instructional designers had previous experience in designing classroom presentations; however, making the transition to effective e-learning course design required additional instruction. The CM scheduled a two-day training session where the CM provided instruction on the process for converting a PowerPoint presentation into a basic e-learning course. Claro was used as the authoring software because no additional cost was required. On day one of the training, the CM provided instruction on the preparation of a PowerPoint file, the Claro interface, importing a PowerPoint file to Claro, and some basic functionality such as adding text boxes, images and audio. On day two, the instructional designers learned to create basic interactions, create an assessment, and publish the course for the LMS. An overview of the writing standards, Claro template, and review process were also discussed.

## **Results**

This e-learning instructional design project resulted in new writing standards, new standardized instructional design processes, new forms for gathering e-learning requirements, and a set of templates to be used with authoring software to create uniform instructional materials across Company A. These e-learning program elements were deemed necessary to establish consistency in instructional design across a decentralized instructional design team. Such consistency facilitates flow and cognitive efficiency among the learners in the e-learning environment.

## **Writing Standards Guide**

A Writing Standards Guide was created to ensure consistent standards of writing and interactions in the e-learning content. The writing standards document contains the most common writing issues encountered in e-learning development with the topics appearing in alphabetical order. Table 1 contains an example of one of the terms in the writing standards document.

**Table 1**

*Example of Term in Writing Standards Document*

<b>Item</b>	<b>Description/Rule</b>	<b>Example</b>
<b>Appears</b>	·Use <i>appears</i> as an intransitive verb; use <i>displays</i> as a transitive verb. · <i>Displays</i> requires a direct object; <i>appears</i> does not.	<b>Do:</b> A message <i>appears</i> if you try to exit the application without saving the transaction. <b>Don't:</b> If you try to exit application without saving the transaction, a message <i>displays</i> . <b>Do:</b> Microsoft Windows <i>displays</i> a message if you do not log on correctly.

Initially, instructional designers seemed unsure that they would be able to enact all the standards in their course creation. Therefore, the implementation of the standards has been an ongoing process that began with significant frustration by the designers; but time and experience has led to improved writing. As designers become more aware of the most common rules within the standards, the number of corrections has decreased; and their confidence has risen. Going forward, the CM has set a goal that e-learning content be 95% free of errors during the initial review.

## **Authoring Software Templates**

The authoring software templates have made course development easier and more consistent. Developers can focus on course content and presentation rather than focusing on color schemes and navigation controls. The addition of JavaScript functions allowed the developers to personalize the instruction (Mayer, 2002) by using the name of the learner on various screens throughout the e-learning course.

## **Instructional Design Processes**

Implementation of new instructional design processes sparked an initial learning curve. However, the stakeholders and course creators were able to adapt and adopt the processes without issue. The L&D team immediately embraced the new processes with no pushback. The decentralized instructional designers understood and accepted the new processes, but the utilization of the processes is limited as they do not currently create enough e-learning content to intuit the process. Time

and additional experience with e-learning development should increase the use of the e-learning instructional design process among the decentralized instructional designers.

## Requirements Gathering Forms

Reformatting the forms to a single Excel file has resulted in more frequent use by the course initiators/requestors and the LMS team. Figure 6 is an image of the Instructional worksheet in the Excel file. This worksheet serves as a cover sheet with instructions and descriptions of each of the forms.

**Figure 6**

*Instructional Worksheet in Excel*

	A	B	C	D	E	F	G	H	I
1									
2	<b>Instructions and Form Descriptions</b>								
3									
4	<b>Purpose:</b>	This file contains multiple worksheets that are used to create and maintain training content in the LMS. The appropriate forms must be completed before any course or assignment is created in the LMS. Below are instructions and descriptions of each form.							
5									
6									
7									
8									
9	<b>Instructions:</b>	Each worksheet contains a specific form containing required information on the desired training. The fields in red are required, while the field in black are optional. All of the required forms must be completed for the training to be made available.							
10									
11									
12									
13									
14	<b>Descriptions:</b>	<a href="#">1. Course Creation Request</a>							
15		This form is required for ALL new training courses or content to be added to the LMS. There are fields on this forms for <i>Requestor Information</i> , <i>Course/Content Information</i> and <i>Course Settings</i> .							
16									
17									
18									
19		<a href="#">2. Section Request</a>							
20		This form is <b>only required</b> for <i>Classroom</i> and <i>Webinar</i> training. Details about the initial classroom/webinar course are added to the LMS using the <i>Course Creation Request</i> form. Specific times, dates, and locations for the trainings are added using the <i>Training Section Request</i> form .							
21									
22									
23									
24									
25		<a href="#">3. Assignment Request</a>							
26		This form is required for any training content that is to be directly assigned to a group. The learners must be active in the LMS to receive the assignment.							
27									
28									
29		Some of the required information on this form can be completed by the requestor, but direct contact with the LMS Team will ensure the assignment is compiled in an accurate manner.							
30									
31									
32									
33		An assignment from the LMS can be new or existing training content.							
34									

Figure 7 contains a partial image of the Course Creation Request form with additional instructions to the right of each field.

**Figure 7**

*Course Creation Request Form in Excel*

Course Creation Request	
<b>Directions:</b>	This form is used to request the creation of new training materials in the LMS. The requestor must complete ALL of the fields in the Requestor Information and Course Information sections. The Course Settings section is completed by the LMS Team.
<b>Submit to:</b>	[Redacted]
Requestor Information	
Department/Location:	[Text Input]
Date of Request:	[Text Input]
Contact Name:	[Text Input]
Contact Phone:	[Text Input]
Contact Email:	[Text Input]
Course Information	
Course Type:	[Text Input] <span>Online, Classroom, Webinar, Video, PDF, Other</span>
Course Title:	[Text Input] <span>Title of the course as it will appear in the LMS</span>
Keywords:	[Text Input] <span>Terms that can be used to search for the course</span>
Course Description:	[Text Area] <span>Description of the course content that will be visible in the LMS. Typically 1-3 sentences.</span>

Figure 8 contains a partial image of the Section Request form with additional instructions to the right of each field.

**Figure 8**

*Section Request Form in Excel*

Section Request	
<b>Directions:</b>	This form is used to request the creation of sections for a classroom training or webinar. The requestor must complete all of the <b>RED</b> fields in each section. The <b>BLACK</b> fields are optional.
<b>Submit to:</b>	thecompass@[REDACTED].com (at least two (2) weeks prior to class date)
Requestor Information	
Department/Location:	[REDACTED] <span style="border: 1px solid black; padding: 2px;"> </span>
Date of Request:	[REDACTED]
Contact Name:	[REDACTED]
Contact Phone:	[REDACTED]
Contact Email:	[REDACTED]
Course Information	
Course Title:	[REDACTED] <span style="border: 1px solid black; padding: 2px;">Title of the course as it appears in the LMS</span>
Class Date:	[REDACTED] <span style="border: 1px solid black; padding: 2px;">Date and Time Zone when the class will be conducted</span>
Class Start Time:	[REDACTED] <span style="border: 1px solid black; padding: 2px;">Start and End times for the class</span>
Class End Time:	[REDACTED]
Minimum # of Students:	[REDACTED] <span style="border: 1px solid black; padding: 2px;">Minimum and Maximum number of students allowed in the class</span>
Minimum # of Students:	[REDACTED]
Automatically cancel class if minimum number of students is not met?	[REDACTED]
Registration Cut Off Date:	[REDACTED] <span style="border: 1px solid black; padding: 2px;">The last date allowed for registration</span>

Figure 9 contains a partial image of the Assignment Request form with additional instructions to the right of each field.

## Figure 9

*Assignment Request Form in Excel*

Assignment Request			
<p><b>Directions:</b> This form is used to request the creation of a training assignment within the LMS. An assignment can be one or more activities. The requestor must complete all of the <b>RED</b> fields in each section. The <b>BLACK</b> fields are optional.</p>			
<p>Submit to: <a href="mailto:thecompass@██████████.com">thecompass@██████████.com</a> (at least four (4) weeks prior to the date the training to be assigned)</p>			
Assignment Information			
Training Assignment:			Brief description of training assignment
Comments:			Add any additional comments about this assignment.
Date training is to be assigned:		Does this training recur?	Date the learner is to begin the assignment
		If yes, date the training is to be re-assigned?	If the training recurs on a regular basis, when should the training be re-assigned?
Date training is to be completed:		Is training completion allowed after this date?	When is the training to be completed? Can the learner complete the training after this date?
Audience/Group to receive assignment:			Identify the target audience for this assignment by the specified criteria.
Other:			

## Training Evaluation

Training for the decentralized instructional designers was well received and appeared productive at the time. However, because these instructional designers do not currently create e-learning on a regular basis, refresher training may be required in the future. An evaluation of the e-learning training program was performed by the CM using the e-learning Maturity Model. Table 2 contains the results of the evaluation.

**Table 2**

### *eMM Evaluation*

Measures	Level 1 Initial	Level 2 Planned	Level 3 Defined	Level 4 Managed	Level 5 Optimized
Student Learning	X	X			
Resource Creation	X	X	X		
Project Support	X	X	X		
Organization	X	X			

Student Learning reached level 2 maturity because the learner needs have been identified, but there is still not a formal strategy in place for future Needs Analyses. Resource Creation achieved level 3 maturity because there are policies in place to protect the intellectual property, but there is no system to properly catalog and reuse the intellectual property. Project Support was a level 3 maturity because the standards, templates and processes are in place but not fully adopted across Company A yet. Organization was a level 2 maturity because the company as whole has not developed an organizational vision for e-learning training. The L&D team has plans to market e-learning and LMS to the organization to increase this maturity level.

## Conclusions

The purpose of this project was to standardize e-learning instructional design processes/tools and implement an e-learning training program to introduce new processes/tool to a decentralized instructional design team. Standardization of process/tools was sought to enhance the flow and cognitive efficiency of e-learning programs across the organization despite a decentralized instructional design team. The new program included five sets of deliverables: authoring software templates, writing standards, requirements gathering forms, e-learning instructional design process, and training on the components of the program. These deliverables established necessary standards and structure where none existed previously. However, 11 months after initiating this project, the full functionality of these deliverables has yet to be realized. With the progression of time and experience using the new tools in the context of the ADDIE instructional design model, the L&D team and decentralized instructional designers should become more adept in the use of the new standardized processes and tools, advancing the maturity of the e-learning program at Company A.

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# What Models are Instructional Designers Using Today?

Jeremy Bond & Kathryn Dirkin

*The rapid evolution of instructional design, its relative novelty, and trends impacting it serve to cloud understanding and complicate practice. This study sought insight into an area of instructional design practice in higher education by exploring a subset of survey data gathered in early 2018. In part, the survey asked instructional designers and leaders of instructional design teams, working in higher education settings, which design models and theoretical frameworks guided their work. Nearly two hundred individuals provided responses. Answers offered most often included models with long histories, relative to instructional design at large, such as ADDIE and Backward Design. Technology's impact on instructional design was also made apparent by the inclusion of tech-focused frameworks including TPACK and SAMR. Statistical testing failed to develop significant relationships between the quantity of models reported in use and other characteristics of designers, however some relationship may exist relating to education and time in the field. Altogether, this may suggest, as reported by a small number of subjects, that the design process can or even ought to be ill-defined and remain fluid to best respond to unique needs as presented by each subject matter expert or design project.*

Instructional design's novelty as a profession creates what Sharif and Cho (2015) call a shroud of obscurity, which limits our collective understanding of practices in the field. Reiser (2001) indicates that instructional design was not recognized as a separate field until the 1960s. In the five decades since, instructional design has rapidly evolved as demand grew. The United States Bureau of Labor Statistics projects an average expected growth rate of 7% through 2024 (2016). Certain trends, while contributing to increased demand for instructional design, have also complicated it and further challenge our understanding. The proliferation of online

learning, expanding technology toolsets, increased availability and access, as well as the emergence of an array of learning environments are among the most notable trends (Allen & Seaman, 2016; Kim, et al., 2007). A role in overall program design and, by extension, an impact on the future of online instruction at an institutional level often also positions instructional designers as leaders (Shaw, 2012). Nevertheless, while perhaps failing to address nuances, definitions for instructional design such as “the systematic process of translating principles of learning and instruction into plans for instructional materials and activities” (Smith & Ragan, 1993, p. 2), are concise, even pedestrian, and yet remain widely accepted. An updated definition added only that the process should be reflective and iterative, in addition to systematic (Smith & Ragan, 2005). Accepted equally well as simplistic definitions of instructional design is the notion that the design process and education itself are not so simple. Caplan (2004), referring to the digital arena of education, describes online course design as “a complex endeavor” necessitating “a highly organized, concerted effort” (p. 186). Education is described by Lohr and Ursyn (2010) as more complicated than rocket science, and instructional design is styled as “a special kind of problem solving” (Simon, 1998, p. 345), which requires practitioners to possess a variety of abilities and personal characteristics (Hatcher, 2008). Yanchar and Gabbitas (2011) encourage instructional designers to demonstrate adaptability, to be versatile, and possess an openness to various sources of insight to be successful. Simply put, much is required of instructional designers as they work to translate outcomes into learning activities and measures.

Using prescribed steps or frameworks, conceptually situated between model and method, designers create and recreate instructional sequences which have proven successful in past efforts (Andrews & Goodson, 1980). In this way instructional designers develop content in a manner described by Friesen (1973), which involves the application of a set of logical steps aimed at accomplishing specified learning outcomes. The practice of applying a model to the design of instruction is “a kind of game plan for...development efforts” (Andrews & Goodson, 1980, p. 4) which assists practitioners in navigating complexities, offers a degree of scalability, and supports quality control. Considering the value promised by using a model, it is not surprising that the number of accepted steps found in the design of instruction grew, “as task analysis, objective specification, and criterion-referenced testing were linked together to form processes” (Reiser, 2001, p. 61). These processes then evolved into models, bridging instructional design’s evolution from the 1960s into the 1970s and beyond.

This paper provides insight into current practice relative to model and theoretical framework use within higher education settings, based on data gleaned from a

survey of instructional design professionals and other individuals leading instructional design teams. A review of literature is included to concisely highlight the evolution of instructional design models, describe criteria commonly used to purpose these models, and comment briefly on the application of and challenges inherent in the use of models. Our methods, findings of the investigation and discussion follow, including potential implications on practice, concluding with the limitations of our efforts and suggesting directions for additional future research and areas of inquiry.

## **Review of Literature**

Relatively early on, as instructional design evolved into a field unto itself, a systematic approach to design evolved quickly into standard practices. Early influences supported the emergence of such systems – models which were meant to standardize and guide designers’ work. Reiser credits Skinner (1954) with creating a minor revolution in education by being first to describe content as programmed instructional materials and setting forth the idea of presenting instruction in small steps. Skinner (1954) also noted the importance of interaction, positing that learners be questioned and, in response to their answers, be provided with immediate feedback. The thought herein of what could be called a feedback loop suggests motivational implications. As each subsequent “step was small, it was thought that learners would answer all questions correctly and thus be positively reinforced” (Reiser, 2001, p. 59). Skinner (1954) identified learning as behavioral change and therefore focused on reinforcement to both encourage and recognize observed behavioral change, and, therefore, to recognize learning. Bloom et al. (1956) likewise contributed to early model design by providing a way to categorize and place in hierarchy the objectives of learning methodology. The perspective of Bloom et al. (1956) was later supported by Mager (1962) with focus being placed on the importance of objectives and successful authoring of objectives by educators. Of equal importance was also the development of a shared understanding of formative and summative assessment in the field. At its start, however, these assessment monikers were not used relative to evaluation or valuation of student performance, but rather relative to the instructional materials themselves. Reiser (2001) indicates only a small number of early instructional products, despite being produced systematically, were tested in any meaningful way. The 1960s additionally brought forth another key evolution in the design of instruction, the emergence of criterion-referenced testing. Testing until that time was “designed to spread out the performance of learners, resulting in some students doing well and others doing poorly” (Reiser, 2001, p. 60). In contrast, criterion-referenced tests measure an individual’s behavior independent of others. This sort of assessment also became a key element of instructional design

processes.

The 1970s could be fairly described as a decade of model development in instructional design. Andrews and Goodson (1980) provided three pivotal outcomes, by investigating models in use at the time, identifying the purposes for those models, and offering conclusions germane to model design and application. The research identified and categorized forty examples of instructional design models (Appendix B), which had emerged during the prior decade, and established four purposes for instructional design. These purposes are improving teaching and learning, oversight of design through monitoring, evaluation of processes, and testing or building of learning from a theory-based perspective. Finally, as noted above, Andrews and Goodson offered assertions relating to design models, the possible reasoning behind the relatively large number of models, and what imperatives both suggested to practitioners. In some cases, models were identified as “generic in that they may be applied across differing purposes, emphases, origins, uses and settings” (p. 12). However, it was further concluded that some “models were not models at all in that they fail to describe, explain, or predict elements in their referent system” (p. 13). The combination of these two factors chiefly explains both the quantity of models existing at the time while also indicating the need for caution as others were likely yet to come. Essentially, as so few models had been in use for significant periods of time, and were therefore not thoroughly vetted, some designers were simply inclined to invent their own model rather than trust one already in existence (Andrews & Goodson). As an emerging field, instructional design, or, more aptly, its practitioners were working toward establishing value. One of the two principles asserted by Friesen (1973) suggests a design process with external expertise, e.g., an instructional designer, is necessary. The other Friesen principle, however, indicates instruction can be created effectively without such support, by “a master teacher, working alone to create an inspired work of art” (p. 2). Andrews and Goodson focused on the notion that a design process supported by an instructional designer, in addition to subject matter expert, is the more effective approach. This push and pull between a subject matter expert’s skill as an educator and the expertise a designer brings continues to impact practice in the present (Tate, 2017). Nevertheless, a recent study concluded in support of instructional design-aided learning development, in terms of student perspective. In an investigation of student perceptions of quality, across four models of course design, spanning a 3-year period, Brown, Lewis, and Toussaint (2018) found significant support for instructional designer-supported course design across all eight of their tested standards.

The implications of this evolution in model development and use are key. On the one hand, the use of a model - any model - can be valuable in providing a frame

within which to work, and a way to represent that work to others, to scale an effort, and ensure consistency. However, the choice of a model and its application can raise questions. If, for example, designers using a single model - one which may not have been appropriately tested, deemed not a model at all by the standards of Andrews and Goodson (1980), or perhaps even the invention of the designer, its efficacy could be questionable. Rigidity can contribute to conflict between designer and subject matter experts (Tate, 2017). In an updated investigation of popular instructional design models, Mutlu (2016) asserts that much of current instructional design practice fits within the broad umbrella of ADDIE. The ADDIE model originates among the models included in Andrews and Goodson (1980), specifically, Branson (1975). While the nature of Mutlu's (2016) investigation suggests some consolidation of models used in practice, and even alignment with a shared guiding process (i.e., ADDIE), the need for a more comprehensive analysis, encompassing more models, is also acknowledged. At the heart of Mutlu's findings is the observation that while "developmental attempts of instructional designers will result in different variations of...models" (p. 6159), some similarities are inevitable.

## Methods

In January of 2018, a survey was distributed (Appendix A) via email to individuals subscribed to various lists including the Arizona State University Blackboard Users Group, Michigan Blackboard Users Group (MiBUG), Professional and Organizational Development (POD) Network, and the University Professional and Continuing Education Association (UPCEA). The survey was also distributed to a list of individuals in teaching and learning/e-learning/instructional design leadership roles in higher education across the United States. The target population, instructional designers working in higher education, was selected for convenience and to align with the researchers' interests.

A web-based questionnaire, created with and hosted on Qualtrics®, was selected to efficiently collect data from many respondents (Trochim, 2006; Wyse, 2012). The instrument was developed to gather information about instructional designers and others working in the instructional design field with other job titles, within higher education. Items were adapted with permission from surveys conducted earlier by Intentional Futures (2016) and Sharif and Cho (2015). Other concepts underpinning survey items were inspired by prior work of Miller (2007) and Gibby, Quiros, Demps, and Liu (2002). Earlier inquiry by the authors unrelated to this research, but partially inspiring its future direction, involved our interacting with instructional design staff from several other institutions including Michigan State University, Virginia Tech, the University of Arizona, and SUNY Polytechnic

Institute, about their practices related to online course design. In essentially all cases, learning design was occurring by virtue of what Hixon (2008) refers to as “team-based course development” (p. 2), an approach which is common at schools focused exclusively on online education (Hixon, 2008). At more traditional institutions, however, faculty typically have “freedom and responsibility to design and develop courses autonomously” (Hixon, 2008, p. 2). Despite these insights into process, the precise models or guiding theoretical frameworks were not ascertained. Therefore, our intent here was to determine which models and frameworks were generally guiding instructional design practice. Information collected by the survey includes data regarding the models, frameworks, and theories in use by the designers and, when applicable, their teams. Individual characteristics (e.g., gender, education, etc.), experience, education, and role were also collected. Additional variables (e.g. leadership and role diversification scores) were also derived from the data.

## **Sampling and Data Procedures**

Before distributing the survey to the recipients described above, the instrument entered a pilot phase amongst a group of approximately fifteen doctoral students and faculty as well as the instructional design staff of a Midwestern university’s teaching and learning center. Edits and suggestions were received and implemented; following this process, the survey link was distributed as previously explained. The sample population was chiefly one of convenience, as participants were selected because they were available, and, those who participated were presumably willing (Creswell, 2015). Snowball sampling may have also occurred, as recipients of the invitation were asked to forward the invitation to others who they believe matched the indicated criteria (Goodman, 1961).

Data was collected over a four-week timeframe in early 2018. Though the survey instrument consisted of four question blocks and used conditional branching to assure that individuals who met specific criteria were exposed to a certain set of questions, this inquiry focuses primarily on data gathered by a single item. An open-ended question, number 18, asked subjects to “Please indicate which theoretical framework(s) or model(s) from the literature underpin your instructional design practice.”

## **Findings**

Nearly three hundred (297) individuals responded to the survey, yielding 254 completed submissions, of which 247 proved usable (subjects who opted not to provide gender, indicated non-binary, or skipped the question, were removed).

Most respondents are female (67%); 30% indicated being male. A large majority of respondents, more than 95%, in fact, are employed full-time. The gender and employment demographics, as well as the findings related to formal education are relatively consistent with earlier studies such as *Intentional Futures* (2016) and *Bean* (2014), as well as U.S. Bureau of Labor Statistics data. Formal instructional design education was indicated by 72% (178) of subjects; 59 specified not having formal education in the field. Collectively, the group possesses substantial credentials; more than 60% (153) have earned graduate degrees and another 29% (72) have terminal degrees. In other words, just one in ten survey respondents possessed only a baccalaureate degree or less education.

The focus of this investigation relates specifically to the area of models, frameworks, and theories which were reported to be currently in use among the instructional designers who responded to the survey. Of 247 possible, 196 subjects (79%) indicated a theoretical framework, model, etc. when prompted. The rate of response to this item was among the lowest across the entire instrument. Among those subjects offering a response, 111 (57%) indicated multiple (>1) theories and/or models, 85 (43%) offered one response; the greatest number of elements offered by any single respondent was eleven.

ADDIE was the most often indicated instructional design model, reported by 81 subjects (41%). Backward design was mentioned frequently as well, by 58 subjects (30%). Frequencies dropped noticeably from there, as numerous other models and theories were reported. The most popular of those mentioned were Bloom’s Taxonomy, Quality Matters, Constructivism, and six others, as noted in Table 1, below.

**Table 1**

*Models Reported by Participants*

<b>Response</b>	<b>Number of Subjects</b>	<b>Percent (%) of Total (n = 196)</b>
ADDIE	81	41.3
Backward Design	58	29.6
Bloom’s Taxonomy	18	9.2
Quality Matters	16	8.2
Constructivist/Constructivism	12	6.1
Dick & Carey	11	5.6
Fink	11	5.6
Knowles, Adult Learning	10	5.1
SAMR	7	3.6
TPACK	4	2.0



In addition to the responses quantified above, some subjects opted to respond differently to the question, offering narrative input. Though these responses represented a small minority, their content gravitated around two similar themes. Either a rather wide range of practices were in place, or essentially no formal models or frameworks were in use. In each case, it was noted that the respective condition existed as each project, course, or subject matter expert is handled individually and uniquely addressed based on the needs presented.

To explore relationships between the data gathered regarding models and frameworks in use and other factors, analysis of those subjects who responded, versus those who did not was done. Across genders, males and females responded proportionately; approximately 23% of males (18) did not respond; 22% of females (37) likewise provided no answer. Other characteristic groups were not as consistent in their response or lack thereof.

Among subjects indicating formal instructional design education (174), 19% (33) did not offer a response, compared to 30% (17) of respondents who indicated a lack of formal ID education. Continuing a focus on the role of education, comparison was conducted among subject-reported perception of their education in preparing them for instructional design work. Of the largest grouping of subjects (89), having indicated their education prepared them for most aspects of instructional design practice, 20% (18) did not indicate a model or framework. Thirteen percent (4) of subjects indicating that education prepared them for all aspects of practice offered no response. Those who indicated being prepared for only some aspects of instructional design work by their respective education (63), left the item blank with the greatest frequency, 25% (16).

By virtue of conditional branching, subjects who indicated formal instructional design education were also asked how long ago that education had been obtained. The majority (161) obtained their education within the prior fifteen years. Within this group, 20% did not respond. Among those with instructional design education from sixteen or more years ago (28), however, just three subjects (approximately 10%) did not answer. Results of similar analysis, based on indicated years of experience in the field, a question posed to all subjects, were also calculated. Those subjects with the least experience in instructional design, less than five years (68), were the most likely to leave the response blank, doing so in 32% of cases. The highest response rate was achieved by those indicating 6-10 years of experience, also the largest grouping of respondents (73); just 15% of these respondents did not provide a response to the survey question.

## Discussion

As noted at the outset of this article, the collective understanding of instructional design is clouded to some extent by its relative youth as a field, as well as its increasing complexity in response to outside trends. Therefore, our research seeks to provide additional understanding of instructional design by surfacing the models and frameworks reported by practitioners to be guiding their practice, within the context of higher education. To claim a need for understanding is vague, however, and does not necessarily get at the heart of the matter. What was sought here was specifically to learn which instructional design models are in vogue among those working in and leading instructional design teams, though some insight into what may be impacting the decision to use, or not to use a particular model may also have been gained.

The findings suggest that ADDIE, though noted no more or less prominently in use than the other 39 models addressed in 1980 by Andrews and Goodson, has perhaps, in modern practice risen to a degree of prominence in instructional design. The second most commonly indicated response is an instructional design model best known as Backward Design, though also commonly referred to as Learning or Understanding by Design, or the Wiggins and McTighe (1998) model. At first glance, the gravitation toward this model may seem far more current than the subject matter of Andrews and Goodson and somehow more novel than ADDIE, given Wiggins and McTighe's notable efforts over the last twenty years. However, Wiggins and McTighe (1998) acknowledge that the idea of designing curriculum and learning activities with the end in mind is hardly new, citing Ralph (1949) for providing the earliest descriptions of this approach. The prominent response of ADDIE, Backward Design (or both) suggests that just as designers recreate instructional sequences which have proven successful in past efforts (Andrews & Goodson, 1980), they may also settle on and repeat design approaches which have successfully yielded those sequences. From this point in the data the responses splinter somewhat, as can be observed in the findings section, and include a myriad of frameworks, not all of which are necessarily aimed holistically at instructional design.

Bloom's Taxonomy, the third most-offered response, though sometimes addressed as an instructional design framework (May, 2018) is not a model in the same process-driven sense as ADDIE. Rather, Bloom's Taxonomy supports the situation of learning, and serves to determine the level or nature of the learning at hand, rather than accounting for the entirety of a course- or unit-level instructional design process. This relationship between model and framework is also evident in some of the other pairings and singular mentions of other things, such as

technology-focused frameworks including TPACK and SAMR.

The evolution of technology over the past seventy years has played an undeniable role in education and likewise in the practice of instructional design. A veritable catalog of the challenges and affordances associated with technology are predominant themes in instructional design literature (Gibby et al., 2002; Miller, 2007; Sharif & Cho, 2015). Therefore, a sort of love-hate relationship exists with technology, at once acknowledging its advantage and power and simultaneously recognizing its potential as a distractive force, often included but not always proven to be of value. Therefore, addressing technology purposefully makes sense as an aim of modern instructional design. However, neither TPACK nor SAMR are generally considered in the literature as instructional design models or frameworks. Rather, TPACK is a framework for technology integration, representing necessary teacher knowledge (Koehler & Mishra, 2009). SAMR, on the other hand, while also not an instructional design model, is a framework for technology implementation which can support a designer in critically considering determinations and purposing of technology (Hamilton et al., 2016).

Arguably the most interesting findings, and also those which identify the greatest need for additional research were those subjects who offered no response, input several models, theories and frameworks, or offered narrative replies indicating a fluid, ill-defined approach to instructional design guided by the unique needs presented. This may point to a practice of instructional design which aligns with White (2000), which better allows for a “collaborative relationship between the instructor and instructional designer...” [and] “just-in-time instructional development” (p. 59). Just 19% of subjects with instructional design education neglected to offer a response to the question, while 30% of those lacking such education offered no response.

These findings also illuminate the complexity of teaching and learning within higher education as the goals and outcomes vary across vastly different fields and disciplines. These goals may also differ from training and preparation to education. All of which align with various theories of learning and subsequently different approaches to instructional design (Christensen, 2008). This is in contrast to a corporate or government context in which one might see more of an emphasis on training.

A related finding, regarding the subject’s perception of preparedness from their education, was also interesting. Those subjects who looked upon their education more favorably were more likely to offer a response. Also of note, are response rates relating to the elapsed time since completion of one’s instructional design education. Subjects with more recently completed education were twice as likely

not to respond compared to those whose education was obtained longer ago. Whether this suggests a shifting focus in instructional design curricula, an evolution which occurs over time in practice, or something else entirely cannot be determined. What may be appropriate to posit is that an instructional designer's time in the field, and the passage of time between their education and the present, are factors impacting their practice, while other individual characteristics (e.g. gender) do not.

This study affords only the ability to speculate as to what precisely is guiding the adoption of particular models and use of frameworks, as well as why such a sizable group of respondents did not provide such information. Future research might seek to expand the data set and determine if the use of a particular model (or lack thereof) relates to the success, or perceived success of instructional design work, from designers or the faculty with whom they work. An expanded study might look at other sectors wherein instructional designers are found, such as corporate training, perhaps affirming or contradicting findings within higher education. In this way, the research might add other perspectives to Brown et al. (2018). Moreover, qualitative inquiry in the form of phenomenological study of designers at work, interacting with subject matter experts, and the components of a project, may yield additional insight.

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## **Appendix A – Instructional Designer Survey Instrument**

Q1 By continuing, you grant consent for your responses to be included in reporting and data analysis. Any identifiable information provided will be removed prior to compiling results. Do you wish to continue?

- Yes (1)
- No (2)

*Skip To: Q2 If By continuing, you grant consent for your responses to be included in reporting and data analysis... = Yes*

*Skip To: End of Survey If By continuing, you grant consent for your responses to be included in reporting and data analysis... = No*

Q2 Are you currently working in an instructional design role (including

management of instructional design staff)?

- Yes (1)
- No (2)

*Skip To: End of Survey If Are you currently working in an instructional design role (including management of instructional... = No*

*Skip To: Q3 If Are you currently working in an instructional design role (including management of instructional... = Yes Page 2 of 8*

Q3 Please indicate your current level of employment

- Full-time (40 hours/week, 10 months or more per year) (1)
- Three-quarter time (30 hours/week, 10 months or more per year) (2)
- Half-time (20 hours/week, 10 months or more per year) (3)
- Less than half-time ( 4)
- Other, please specify: (5) \_\_\_\_\_

Q4 Please indicate your gender:

- Male (1)
- Female (2)
- Non-binary/third gender (3)
- Prefer not to say (4)
- Prefer to self-describe: (5) \_\_\_\_\_

Q5 Do you have formal instructional design education (e.g. a degree in instructional design or a closely related field)?

- Yes (1)
- No (2)
- Other, please specify: (3) \_\_\_\_\_

*Skip To: Q7 If Do you have formal instructional design education (e.g. a degree in instructional design or a clo... = Yes*



*Skip To: Q6 If Do you have formal instructional design education (e.g. a degree in instructional design or a clo... = No Page 3 of 8*

Q6 My formal education prepared me for work in the field of instructional design in:

- All aspects
- Most aspects
- Some aspects
- Only a few aspects
- Other, please specify: \_\_\_\_\_

Q7 Approximately how long ago did you complete your formal education in instructional design?

- <5 years (1)
- 5-10 years (2)
- 11-15 years (3)
- 16-20 years (4)
- 21-25 years (5)
- >25 years (6)

Q8 Please indicate your highest level of completed education:

- High School
- Associate's Degree
- Bachelor's Degree
- Master's Degree
- Doctoral Degree
- Other, please specify: \_\_\_\_\_

Q9 Please select the option which best indicates your years of experience in instructional design:

- <5 years (1)
- 5-10 years (2)
- 11-15 years (3)
- 16-20 years (4)
- 21-25 years (5)

- >25 years (6)

Q10 Do you manage other employees?

- Yes, formally. (1)
- Yes, informally (the other employee(s) do not report to me, but I assign work to them) (2)
- No (3)

*Skip To: Q11 If Do you manage other employees? = Yes, formally.*

*Skip To: Q11 If Do you manage other employees? = Yes, informally (the other employee(s) do not report to me, but I assign work to them)*

*Skip To: Q13 If Do you manage other employees? = No*

Q11 Approximately how many other employees do you manage?

- 1-2 (1)
- 3-4 (2)
- 5-6 (3)
- more than 6 (4)

Q12 Which of the following best describes the function(s) of the employees you manage (select all that apply)?

- Instructional Design
- Audio/Video/Graphic Production
- Coding/Programming
- Technical Support
- Administrative/Clerical
- Project Management
- Other, please specify:

Q13 About how much of your time at work is invested in instructional design activities, not including management of other instructional designers?

- (1)

- 21%-40% (2)
- 41%-60% (3)
- 61%-80% (4)
- >80% (5)

Q14 In addition to instructional design work, which of the following functions do you also perform (select all that apply)?

- Audio/Video authoring/editing or Graphic design (1)
- Coding/Programming (including HTML) (2)
- Committee work (e.g. assessment/accreditation councils, oversight groups, etc.) (3)
- Faculty development (e.g. designing and/or conducting workshops/training) (4)
- Instructor (e.g. teaching one or more courses on a regular basis) (5)
- Personnel management (e.g. hiring, performance review, etc.) (6)
- Scholarly activity (e.g. research, publishing) (7)
- Server administration (e.g. LMS, database, web server) (8)
- Technical Support (9)
- Other, please explain: (10) \_\_\_\_\_

Q15 Which of the following best describes your area of specialization in your current instructional design role?

- online learning design (1)
- classroom learning design (2)
- blended learning design (3)
- general learning design, including classroom, online, and blended (4)
- other, please specify: (5) \_\_\_\_\_

Q16 Which of the following best describes the design model in use in your current setting?

- The same design model is applied to each project (i.e. a template is used) (1)
- The design model varies slightly, project by project, based on needs (2)
- The design model varies greatly, project by project, based on needs (3)
- No formal design model is used (4)
- Other, please specify: (5) \_\_\_\_\_

Q17 Which of the following describes ownership of the design model in your current setting (select all that apply)?

- I created the model/models my team and I use (1)
- I was given the model/models I/my team use(s) (2)
- I do not have authority to change the design model(s) (3)
- I have authority to make changes to the design model(s) (4)
- I and others have authority to make changes to the design model(s) (5)
- Other, please specify: (6) \_\_\_\_\_

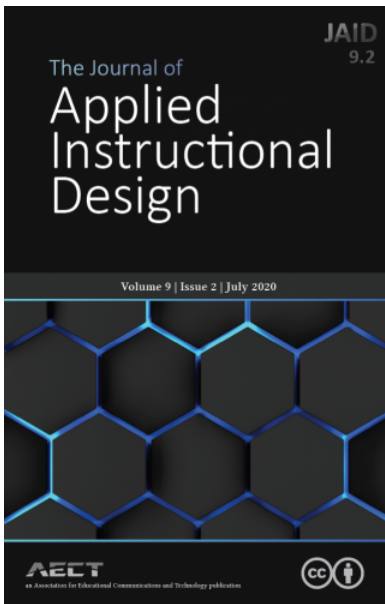
Q18 Please indicate which theoretical framework(s) or model(s) from the literature underpin your instructional design practice:

\_\_\_\_\_

Q19 Would you be interested in being interviewed to further discuss your answers to this survey?

- Yes, my email address is: (1)  
\_\_\_\_\_
- No (2)





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