DRS2016
Design + Research + Society
Future-Focused Thinking

2016 Design Research Society
50th Anniversary Conference
27-30 June 2016, Brighton, UK

The information designer through the lens of design for learning

Eden Potter

AUT University, New Zealand
eden.potter@aut.ac.nz

Abstract: All effective information design helps people to access, understand, and use information, but not all information design is intended to help people learn. This paper examines instructional design—the activity of creating and developing learning experiences that meet learners' needs—and places it as a lens through which to identify the key skills and personal attributes that information designers need to succeed in their field.

Keywords: Information designer; Instructional designer; Skills; Attributes

1. Introduction

Instructional design uses information design to help people learn. Like all forms of information design, its outputs need to be accessible and usable, and it must meet people's needs. Instructional design creates experiences for learners that promote behavioural and cognitive change.

In this paper, I examine both the high-level content design and the visual design aspects of instructional design to evaluate the information designer's role in designing educational experiences for people. First, I discuss findings from an investigation into instructional designers' roles, workflow, collaborative activities, skills, and personal qualities. For this I conducted two separate semi-structured, face-to-face interviews to elicit the opinions and attitudes of instructional design practitioners—a senior instructional design consultant and a graphic designer who has worked in instructional design. Since these were both 'expert interviews' from the perspective of practitioners with two very different skill sets, a broader survey was unnecessary (Muratovski, 2015, p. 61). Interview data were coded and categorized, and then compared with information design and instructional design literature

to suggest which general 'hard' and 'soft' skills and attributes are essential for an information designer to possess.

2. The situation

The interdisciplinary approach from which information design has emerged means that many fields claim 'information design' as a core activity. Some of these are data visualization, interaction design, technical communication, user experience design, and instructional design. With such a range of fields, many still at a relatively nascent stage, definitions of information design vary widely. This is in part due to the personal biases and backgrounds of those adopting the title 'information designer' to describe what they do (Albers, 2003, p. 3; Redish, 2000, p. 163). Practitioners—including instructional designers—tend to adopt an identity around the practices and processes within their field.

In 2003, Beth Mazur suggested that "information design is in motion" (p. 33), with research and professional activities shaping the discipline and how it is defined. In 2016, increasing globalization and the rate of technological change means that information design is still on the move. Information designers recognize that people are using technology differently than they did 10 years ago. Mobile devices, cloud computing, and Web 2.0 offer designers new opportunities and challenges (Carliner, 2009, p. 130). Globalization has created a need for international information products, so designers must be even more aware of cultural preferences and perceptions when designing for various audiences. Information designers' on-the-job challenges are more complicated, because new trends are appearing, and designers' essential skills are becoming more extensive (Zaballero, A.G., Tutaleni, I. A. & Briskin, J., 2015, para. 1).

As information designers' core competencies evolve, designers in some fields are suggesting they redefine their job title and roles (Moss, 2014). In instructional design, a growing number believe that the job title 'instructional designer' no longer represents their roles and responsibilities. A recent study showed that 31 per cent of instructional designers surveyed thought that a more generalist title would reflect their additional roles in organizational development, coaching, and communications (Zaballero, A.G., Tutaleni, I. A. & Briskin, J., 2015, para. 3). Others are using the term 'learning experience designer' (or LX designer). Instructional design author and critic, Connie Malamed advocates using this title. She claims it is more user-centric, that it suggests 'learning' rather than 'instruction', and that it puts more emphasis on designing *experiences* than designing *things* (Malamed, 2015). But despite changing roles and nomenclature, particular skills and personal attributes are critical to being a successful information designer. This paper examines these using the 'lens' of instructional design.

3. Instructional design: models, stages and products

Design fields that use information design, such as user experience/user interface design and technical communication employ user-centred design to understand the needs of people

who will use their products, and to guide the design process. User-centred design focuses on understanding a particular audience's attitudes, behaviours, environment, needs, and goals. It also involves testing and evaluating how people interact with a given design product with the aim of optimizing its performance. It is a multidisciplinary, iterative process of initial project planning, understanding the user context, identifying user requirements, designing potential solutions, and testing and evaluating the design against user needs and requirements (Zaharias & Poulymenakou, 2006, p. 89). Examples of user-centred approaches to information design include formalized models for testing and measuring a design artefact's performance (Sless, 2004, p. 5; Tyers, 2008, p. 204; Nini, p. 4), and user testing to develop internal information products within public sector agencies (Martin, Gregor & Rice, 2008).

Instructional design draws on user-centric models to guide the process. Out of all of the Instructional Systems Design (ISD) models used to design learning solutions, ADDIE (Analyze, Design, Develop, Implement, and Evaluate) is regarded as one of the most effective and responsive (Branch, 2009, p. 1). Although some criticize ADDIE as being staid and formulaic, (Hokanson, B., Miller, C., & Hooper, S. 2007), while others argue that its solutions are imposed *upon*, rather than designed *with* learners (Carr-Chellman & Savoy, 2004, p. 702), ADDIE remains a starting point for other ISD models (ADDIE model, n.d.). ADDIE is comparable to other user-centric information design models with its focus on the user, and their performance in a given task. However, with instructional design, the *content*, and how this meets learning outcomes is the most important factor (E. Vella, personal communication, 21 October, 2015).

Like other user-centric information design fields, instructional design involves knowing what information the audience needs and how they will use it to achieve their goals. Information design activities are team-based, where internal and external stakeholders and subject matter experts contribute to the process. The term 'instructional design' encompasses the end-to-end process involving these stakeholders, not only the visual execution aspects in much the same way that 'service design' describes the design of an organization's service components and experiences.

The following section discusses instructional design outcomes, and elaborates on the design team's structure and key roles. This provides a context for my findings about the essential skills and personal qualities of an information designer.

3.1 What instructional design produces

Some instructional design outcomes are designed for an educational setting; for example, teaching manuals and student guides, full course materials, entire curricula for face-to-face instruction, online distance education, or blended courses. Many instructional design consultancies work in the corporate sector—for financial, retail, manufacturing, and agribusiness clients—or in the government sector.

In commercial and government environments, instructional design resources include ("Services," n.d.):

- paper based study resources
- e-learning modules
- online games
- m-learning (mobile learning) solutions
- quick reference guides
- inductions
- training courses
- animated communications
- webinars
- information graphics

The instructional design consultant I interviewed suggested that company induction resources made up 40 to 50 per cent of the commissioned projects she and her team work on (E. Vella, personal communication, 21 October, 2015). Three-yearly changes to organizational policies and processes, as well as new people coming on board create demand for induction material. These are mainly e-learning modules. Apart from product systems training programmes for institutions like banks, there is little information documentation produced, because most organizations already have them in-house. Instead, they "deal more with the tools and instructions that send people off to those resources" (E. Vella, personal communication, 21 October, 2015).

One of the tools described during the interview was a product systems training programme. This was designed to help bank employees to learn the processes involved in dealing with transactions, separating customer's money, and understand the journey that money takes through the bank and back to customers. Scoping and analysis indicated that bank staff needed to understand how their individual accuracy and system use on the job had impact on other employees' roles. The instructional design team broke down the various processes and tailored the systems training components into quick reference, succinctly worded information products that worked to troubleshoot on-the-job situations. A series of e-learning modules and animations supported the tools.

Another information product, induction resources are not role specific. A New Zealand government agency needed to help new employees to understand the scope and breadth of their activities (the big picture), build anticipation about their new job while showing them where they fitted in, and cover compliance issues such as codes of conduct. Three e-learning modules were developed. The first was a welcome module, where employees shared their experiences. The second module aimed to help new employees to understand the organizational structure. Instead of a 'where do I fit in?' structure diagram, the instructional design team produced a narrative 'roadmap' in live action and animated video form, showing the government agency's touchpoints that a customer might interact with, using

quiz style information. The third module was scenario-based, where an array of social and workplace situations took users through what were and were not acceptable codes of conduct. A planner outlining the new employee's larger induction journey supported these modules.

3.2 Key stages in an instructional design project

ANALYSIS

For any instructional design project regardless of the model used, the first stage is analysis. This is critical to the project's success ("How we work," n.d., para. 15). Often learning design consultancies are commissioned to do some training needs analysis; working out where an organization's staff need to be, and comparing this to what they can do now. Other times, there will be an initial meeting with the client to gain a sense of what they need (E. Vella, personal communication, 21 October, 2015).

This is followed by a couple of scoping meetings, where project managers, instructional designers, a subject matter expert, and client stakeholders will determine the following:

- learning needs
- objectives and outcomes
- learners' experience
- scope and scale of this project—whether it's a 'just in time' solution, or a long-lasting one
- deliverables and their possible components
- budget

After the analysis phase is completed, a project plan brings together all the information gathered in the discovery phase. This can be described as "the scaffold of your solution" (E. Vella, personal communication, 21 October, 2015). It includes "what we've captured in terms of what the deliverables are, what the objectives are and what needs to be covered under each of those objectives, and how we'll do it". Once the client signs off the project plan, the design phase starts.

DESIGN

For e-learning module → Draft 1: initial high level storyboards of all deliverables in PowerPoint → client sign off → Draft 2: full draft of the solution with all content, scripts, and visual design applied, created using authoring tools such as Storylines or html → client signs off draft to go to development phase (feedback meetings or document tracked changes).

For paper-based learning resources → Draft 1: initial high level in Microsoft Word → editing and proofing → client sign off → Draft 2: full draft of the solution with all content and applying visual design and branding using InDesign, or Word, depending on the project

→ client signs off draft to go to production phase (feedback meetings or document tracked changes).

Sign-off involves feedback meetings or document tracked changes. Depending on the changes involved, there may be more feedback loops than detailed above.

DEVELOP

Using an iterative process, programmers work closely with subject matter experts to develop the content assets into the finished resource. They then conduct performance testing.

IMPLEMENT

This is a client hand-over phase, where online and print publishing, and workshop facilitation happens ("How we work," n.d., para. 24). Instructional design consultancies may also give assistance with an organization's Learning Management System.

EVALUATE

Clients are interested in their return on investment and how effective the learning resource is. As well as assessing each design stage, learning design consultancies evaluate learner performance after the resource is implemented, and coach their clients' in-house evaluators ("How we work," n.d., para. 27).

3.3 Project teams and stakeholders in the instructional design process

Multidisciplinary teams are integral to the successful development of an instructional design solution. Technical communicators spend between 20 and 80 per cent of their time working in teams through a variety of roles and specializations (Hart & Conklin, 2006). Instructional design teams include instructional designers, editors, online and print developers, graphic designers, and IT support.

In the learning design consultancy I examined, project managers act as team leaders, and each key project is assigned a project manager. Senior consultants project manage much of the work, with a couple of other instructional designers taking on project management work as well. All project managers are also instructional designers, yet at the instructional designer level, roles are not strictly demarcated:

> We're *all* doing the work, it's just there are a few key people who are mainly managing the project, but we kind of divvy it all up evenly and at any one time one of us could be managing a large portion of small projects, or it's all one massive one and three smaller ones" (E. Vella, personal communication, 21 October, 2015).

Baehr (2015, p. 116) claims technical communicators' ability to manage complexity in general makes them good organizational team leaders. This means instructional designers can easily move into managerial or team leadership roles within their consultancy.

Although project managers act as quality control, there is fluidity in the working process and lines of communication in the design phase. Project managers and instructional designers

consult with the graphic design team, editors, and online developers about the solution's feasibility at early draft stages. Not all client liaison needs to go through project managers, however. Instructional designers sometimes work directly with clients to prepare the full draft.

The graphic designer's role in instructional design projects is primarily execution at the end of the design process. This means taking what the instructional designers has drafted, applying the client's brand identity, and ensuring the design is clean, clear, and makes sense. A former graphic designer at a learning design consultancy claims:

> …because we had the instructional designers acting as the project managers and the key contact with the clients, usually it had all been sort of locked down by the time it came to the graphic design team and our role was really just the design work… We would go back if we felt like this content's too wordy to fit here, or we need to simplify this, or we need to do something with this diagram, but generally our role was executing (I. Parry, personal communication, 16 October, 2015).

If some work does not need an instructional designer's input—like amendments or 'raw' graphic design—it is passed directly to the graphic design team to manage.

In the instructional design process, subject matter experts are brought in at the initial scoping stage, and are consulted throughout the design process (E. Vella, personal communication, 21 October, 2015). This entails collecting the information from the subject matter experts and consulting with them throughout the entire design process to check factual and contextual accuracy (I. Parry, personal communication, 16 October, 2015).

Working with clients involves, 'bringing them with you' so that they understand the process and the designers' advice. At the same time, instructional designers must listen to clients and take their feedback on board (I. Parry, personal communication, 16 October, 2015). Branch (2009, pp. 16–17) suggests that working with subject matter experts in an ethically sound manner—representing their ideas accurately in the finished product, respecting the value of their time, and acknowledging their contributions—builds cooperation and partnership. Prioritizing the subject matter experts' concerns can also be challenging for the design team. Designers need to be patient with subject matter experts to draw what they need from them (personal communication, 16 October, 2015). Subject matter experts focus on the detail; they typically can't see the big picture in terms of content. They may regard *all* of what they tell you as being equally important (Bean, 2014).

The way a design team works with their client or primary stakeholders often determines a project's success. Instructional design teams provide a service *for* clients and stakeholders, while subject matter experts and other content specialists are partners in the design process, working *with* the design and development team (Branch, 2009, p. 15).

4. Essential skills and qualities for an information designer to have

The following section outlines the personal qualities and skills that contribute to an information designer's success in producing effective information design outcomes. The focus is on what they know and can do, as well as their 'soft' skills and attributes.

4.1 An information designer's practical skills

BEING ABLE TO ASK QUESTIONS

Information designers must ask the right questions at the right time when talking with subject matter experts and clients. The range of subjects that information designers often work with is vast, so designers need to understand what they're working with (O. Tomlinson, personal communication, 10 July, 2014) and be willing to move from the process of not knowing to knowing. Sometimes this also means asking the 'dumb' questions when you're trying to understand something: "If you're assuming stuff you can't do a good job" (I. Parry, personal communication, 16 October, 2015).

COMMUNICATION SKILLS

This includes excellent verbal, written, and visual skills to communicate with the client, stakeholders, and your audience (I. Parry, personal communication, 16 October, 2015). It means having the "skill to not only listen but also synthesize what's being said" (Zaballero, A.G., Tutaleni, I. A., & Briskin, J., 2015, para. 5).

BEING MULTI-SKILLED AND AGILE

Information designers need to be adaptive, resourceful, and agile. They are multi-specialists who perform diverse roles (Baehr, 2015). At an individual level, it helps to have "mental agility to be able to switch between things, and remember what's been said…" (E. Vella, personal communication, 21 October, 2015).

ABILITY TO ORGANIZE AND STRUCTURE INFORMATION

This is "the practical skill of going: this goes with that" (E. Vella, personal communication, 21 October, 2015), and "learning to scaffold information in its purest form" through written and visual editing (I. Parry, personal communication, 16 October, 2015).

PROJECT MANAGEMENT SKILLS

Information designers must "be good with numbers and to be really clear about who's doing what at what time in the project" (I. Parry, personal communication, 16 October, 2015). This is particularly important as designers move into hybrid roles through organizational change (Baehr, 2015).

4.2. An information designer's personal qualities

EMPATHY

Having empathy in information design practice means, "recognising what it feels like to not understand, and to be confused and overwhelmed" (I. Parry, personal communication, 16 October, 2015), while overcoming your own prejudices, affinities, and needs (Albers, 2003, pp. 7–8). Empathy means having a "shared deep connectedness" with people who will use the information and being aware of people's barriers to learning, "enabling people to seek the information they want in the way they can" (E. Vella, personal communication, 21 October, 2015). It is understanding "how people will interpret our designs, seeing the world through their eyes" (O. Tomlinson, personal communication, 10 July, 2014). Empathy in design, defined as a "deep understanding of the problems and realities of the people you are designing for" (IDEO, 2009, p. 89), is critical to user-centred design.

CURIOSITY

Being curious is where it starts for many information designers. In practice, this means being curious about:

- the situation – "asking why over and over again, and being really curious about this information and who needs to use it and what they need to use it for. Really getting curious about that scenario" (E. Vella, personal communication, 21 October, 2015).
- other people – "I'm endlessly interested and curious about other people's jobs" (E. Vella, personal communication, 21 October, 2015).
- the world – including other fields, people, influences, and phenomena (Raymer, 2013, para. 13), because "nobody can do their job removed from what's happening around us" (E. Vella, personal communication, 21 October, 2015).

HUMILITY

Information designers should not believe that their job is "to fix the scenario for people" (I. Parry, personal communication, 16 October, 2015). Frascara (2010) echoes this viewpoint, claiming that he doesn't believe that designers can solve problems, only reduce them.

PATIENCE

When working with clients and subject matter experts, designers need to be patient with the process that takes them from not understanding to understanding, logically working through until you gain clarity (I. Parry, personal communication, 16 October, 2015).

CULTURAL AWARENESS

With increased globalization and internationalization through technological advances, "…it is no longer sufficient to design based on one's cultural prism or in favor of a dominant culture. Training programs are now consumed cross-culturally and must be designed to respect other cultures" (Zaballero et al, 2015, para. 7). Increasingly, information products need to be

localized—altered so that they can be used internationally, or globalized—created so that they don't need to be modified for other cultural contexts (Hoft, 1995, p.18).

CREATIVITY

Bean (2014) and Malamed (in Raymer, 2013, para. 9) regard instructional designers as creative practitioners in the way they pull the user in, tell compelling stories, and engage people to help them to remember information and learn.

5. Discussion and conclusion

This paper investigated the skills and personal qualities needed to be successful as an information designer, by focussing on the instructional design field and identifying skills and attributes that are common and general for practice.

An information designer's skill that did not appear in the research was competence with digital technologies. Carliner (2003, p. 39) has identified a shift in the field, increasingly moving from a focus on tools to a focus on content; this may explain the low priority on technological skill acquisition.

I suggest that well-developed 'soft' skills are essential for an information designer. In a recent study of key instructional design skills, 'soft' skills were ranked as the most important (Zaballero, A.G., Tutaleni, I. A. & Briskin, J., 2015, para. 5). These include being a life long learner, knowing instructional design methods, principles, and adult learning theory, and being an excellent multimodal communicator. Information designers need to be curious about—and interested in—people. Information designers must know how and when to ask questions, and yet be humble enough to not be the 'expert'. Creativity is less important, but without it, information design solutions are less likely to engage and delight.

A key personal quality was found to be empathy; the most commonly identified personal attribute in this research. Having empathy helps information designers to 'step into the shoes' of their target audience, to understand them better, and to make ethical decisions. User-centred design is underpinned by designers' ability to orient their thinking and process towards people's needs. An empathetic approach improves designers' awareness of cultural considerations. It encourages information designers to care about the effects of their work, and to help their audiences reach a place of understanding.

6. References

ADDIE model. [Website]. (n.d.). Retrieved 25 October, 2015, from Instructional design.org website: http://tinyurl.com/2ufm4bc

Albers, M. J. (2003) Introduction. In: M. J. Albers & B. Mazur (Eds.), *Content and complexity: Information design in technical communication* (pp. 1-13). Mahwah, NJ: Lawrence Erlbaum.

Baehr, C. (2015) Complexities in hybridization: Professional identities and relationships in technical communication. *Technical Communication, 62*(2), 104–117. Retrieved from Academic OneFile database.

Bean, C. (2014) *The accidental instructional designer: Learning design for the digital age.* Alexandria: ASTD Press.

Branch, R.M. (2009) *Instructional design: The ADDIE approach*. Springer Science & Business Media. doi 10.1007/978-0-387-09506-6_1

Carliner, S (2003) Physical, cognitive and affective: A three-part framework for information design. In: M. J. Albers & B. Mazur (Eds.), *Content and complexity: Information design in technical communication* (pp. 39-58). Mahwah, NJ: Lawrence Erlbaum.

Carliner, S. (2009) An interview with Maish Nichani. *Information Design Journal, 17*(2), 128–133. doi: 10.1075/idj.17.2.06car

Carr-Chellman, A. & Savoy, M. (2004) User-design research. In D. H. Jonassen (Ed.), *Handbook of Research on Educational Communication and Technology* (2nd ed., pp. 701-716). Mahwah, NJ: Lawrence Erlbaum.

Frascara, J. (2010, April 22) *Data, information, design and traffic injuries / Podatki, informacije, oblikovanje in prometne poškodbe*. [Video file]. Retrieved from: http://tinyurl.com/z97gr7p

Hart, H., & Conklin, J. (2006) Toward a meaningful model for technical communication. *Technical Communication, 53*(4), 395–415. Retrieved from Academic OneFile database.

Hoft, N. (1995) *International communication.* NY: John Wiley and Sons.

Hokanson, B., Miller, C., & Hooper, S. (2007) *The roles of design: A new method of instructional design*. Retrieved from http://tinyurl.com/jpygfyw

How we work. [Website] (n.d.) Retrieved 25 October, 2015, from http://tinyurl.com/zuzg4xn

IDEO (2008) *The human-centred design toolkit* [Booklet]. Retrieved from http://tinyurl.com/jexr3jr

Malamed, C. (2015, May 31) *Instructional design needs a new name!* [Web log post]. Retrieved from http://tinyurl.com/zad4zyd

Martin, N., Gregor, S. & Rice, J. (2008) User centred information design practices and processes at the Astralian Taxation Office. *Information Design Journal,* 16(1), 53-67. doi: 10.1075/idj.16.1.08mar

Mazur, B. (2003) Information design in motion. In Albers, M. & Mazur, B., *Content & complexity: Information design in technical communication,* (pp. 15–38). Mahwah, NJ: Lawrence Erlbaum.

Moss, S. (2014, June 15) *Information design – the new name for technical communication?* [Web log post]. Retrieved from http://tinyurl.com/gm4eeu9

Muratovski, G. (2015) *Research for designers: A guide to methods and practice*. London : Sage Publications.

Nini, P (2005) Sharpening one's axe: Making a case for a comprehensive approacch to research in the graphic design process. *Visual: Design: Scholarship*, *1*(2), 1–10.

Raymer, R. (2013, September) The rock stars of eLearning: An interview with Connie Malamed. *eLearn Magazine*. Retrieved from http://tinyurl.com/j8qzgac. doi: http://dx.doi.org/10.1145/2530002

Redish, J. C. (2000) What is information design? *Technical Communication, 47*(2), 163–166. Retrieved from Academic OneFile database.

Services. [Website].(n.d.) Retrieved 05 November, 2015, from Optimism website: http://optimism.co.nz/services/

Sless, D. (2008) On clarity. *Design Research Quarterly*, *3*(1), 1–6.

Tyers, A. (2008) Performance based design. *Information Design Journal,* 16(3), 202-215. doi: 10.1075/idj.16.3.04tye

Zaballero, A.G., Tutaleni, I. A., & Briskin, J. (2015, June) Instructional design skills need to keep up with the pace of change: Study identifies both top-ranked and least-important ID skills. *T+D, 69*(6), 9.

Zaharias, P. & Poulymenakou, A. (2006) Implementing learner-centred design: The interplay between usability and instructional design practices. *Interactive Technology & Smart Education, 3*(2), 87–100.

About the Author:

Eden Potter is an information designer and design educator. She teaches on the Communication Design degree at AUT University, New Zealand, where her research interests include information design, branding, and design for learning.