

Writing and Rewriting the Instructional Design Case: A View from Two Sides

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This article analyzes five problem areas educators grapple with when writing design cases about learning interventions. The article is written from the vantage point of IJDL's assistant editor who edited, reviewed, and coordinated the reviews of design cases over a period of two years while also writing his own design case (Howard & Myers, 2010: *International Journal of Designs for Learning*). The knowledge building genre of the instructional design case is viewed from the perspective of commonalities between articles published in a *Tech Trends* feature, the *Instructional Design Portfolio*, and this venue. The areas of concern common among reviews for these publications shed light on how the design case is developing into a rigorous form of educational inquiry. The areas of concern brought up in reviews of cases are discussed in light of the author's first hand experiences of satisfying reviewers' concerns and, in turn, coaching other educators through the process of a finalized design case. Those common areas are: (1) situating the design, (2) describing the design, (3) depicting the experience of the design, (4) developing trustworthiness through transparency, analysis, and reflection (5) removing aspects of design cases which confound their purpose. Specific examples from design cases that have gone through peer review describe how author-educators may approach the dissemination of design precedent through the careful documentation of pedagogical designs.

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Writing and Rewriting the Instructional Design Case: A View from Two Sides

With each instructional design, the designer/design team has created knowledge through their lived experience of creating that design for learning (Lawson, 2004). When that knowledge is worth sharing with other designers, the design case is a vehicle to share that knowledge (Boling, 2010). However, educators have unique difficulties writing design cases. A design case “is a description of a real artifact or experience that has been intentionally designed” (Boling, 2010 p2). I have had the unique opportunity of coordinating the peer reviews of others’ design cases before writing one of my own. After a year of reading design cases and their reviews, I felt I was ready to write a rigorous design case. With that submission I experienced first-hand the difficulties authors have developing a rigorous design case, and my understanding of the unique challenges it entails became far more concrete.

My design case was about a pedagogical intervention I created for a blended undergraduate education class. The design used videos of practicing teachers posted to YouTube to facilitate discussions among pre-service teachers. I had given the learners the task of viewing the videos in conjunction with asynchronously discussing teaching practices via annotations placed atop the video (Howard & Myers, 2010). Like other cases I had read, mine was also a complex design. Even after having read a number of design cases and having seen authors struggle to verbalize the complexity of their own designs, I failed to truly recognize the complexity of my own. Components of my design needed to be presented clearly, concisely and, most importantly, separately in order to be useful for other designers. I had initially written my case as I had lived it, in a narrative of the experiences and struggles of many tasks, many overlapping each other. In doing so I had trapped myself in an untenable situation of having to toggle between parts of the design which were created in tandem—in sequences sometimes contingent on the completion of other tasks and sometimes not. Step x was completed before step y, but components of y had to be decided upon before z could be finished, and so on. The narrative, like many other components of design cases, had limited utility in explaining the complexity of a design to another designer. Despite having read many cases and reviews of cases, I struggled with explaining the complex design in a simple way that other designers could use. This article links my experience of writing a design case with common reviewer concerns I have seen. The common questions reviewers ask can be categorized into five categories. This sequence of categories loosely mirrors one of the structures a pedagogical design case might take, but I do not present these groupings to dictate the structure of design cases, just to offer a useful option. The last category contains items that are often selected by knowledgeable reviewers for removal from design cases. In each category, I include some rationale about how reviewers come to these

questions in hopes that this article will help other authors create rich precedent that designers and students can use.

Situating the design

What were changes in context which motivated the design or re-design?

Readers' understanding of the rationale behind design decisions and the trustworthiness of the entire design case may hinge on a clear presentation of the context of the design. Even after offering a rich description of the context of my learning design, I had failed to come out and say that my intervention was replacing another one. I am not alone in failing to recognize all the aspects of the context which motivated the re-design. All the changes in context may not be relevant, or even known to the author of the design case, but rarely does a design take place in a completely new context (Cross, 2007). The context was new to me, but not altogether new. Even repurposed designs can be worthy of a written design case, provided the author includes the rationale that linked their choice to the new context. A thorough description of context, which the reader needs to grasp a conceptual image of the case, could contain any number of foci: the learners, the school or institution, agendas of people in pivotal positions driving action, available technologies, sources of support, other resources, and one aspect of context which I missed-- a discussion of the relevant stakeholders.

In my case, I was a new stakeholder equipped with new tools. The designer (me) was a new aspect of the context, but there were also new media available that had not been available when the initial design had been created. My position as teacher/designer and a new media opportunity (video annotations) initiated the re-design. I created the YouTube videos because I (1) believed in shared teacher observation discussions and (2) I could. I also brought to the situation an interest in online discussions. I had planned the discussion to take place on top of the video via annotations because I was curious about how people use new media to communicate. One reviewer wrote, "So the change in the teacher-stakeholder motivated the design?" I had recognized the new affordances of the media, but I hadn't seen myself as a stakeholder. Authors new to writing design cases for pedagogical interventions, including myself, can easily overlook the fact that the reason we design something is often because another design has failed to live up to new desires or expectations of new stakeholders.

While changes in stakeholders can be the impetus behind re-designs, authors new to design cases may be reluctant to identify these changes—especially if the changes in context have to do with their own personal decisions. Reviewers of design cases often ask about stakeholders, and in a section where the context is discussed, this is key information. In my case, the previous design had been created by a colleague. I was reticent to state my perspective for fear that it might highlight shortcomings of the previous design

and seem to blame previous teachers of the course. But in truth, a previous stakeholder was now absent, and my own goals had become a new aspect of the context. While I still identified the context in the legacy of someone else, the reviewer did not. I was redesigning another designer's work to fit my own goals and how I interpreted the goals of the course. Identifying aspects of context which did not exist for the previous designer(s) helped me make the case that I built on that previous design, rather than tore it apart. By noting changes in stakeholders, new goals, or other contextual changes, such as the desires of a new stakeholder /designer, you can give credit to previous designs and previous designers while at the same time introducing the motivators behind the redesign.

Who was the design team and what were their influences?

Rigorous design cases include all the descriptions needed to characterize context, and this includes descriptions of the people who were involved in the design process. Reviewers requested more information about the design team, but I felt awkward describing myself in a scholarly publication despite my having been the primary designer. I reasoned the influences I brought to the design were more important than a description of me. I described my background rather briefly in one line, but I expanded on other factors which influenced the design. Since my design was closely tied to my research, I had been doing a large amount of traditional scholarly reading, and this was working on me while I was designing the intervention. This discussion of influential readings was far more complex and became 2:25 minutes of audio in the final multimedia design case, much more in depth than the self-description. I had also sought out the help of a colleague at a critical incident during the design. He provided a description of his previous experience and background to explain what brought him to his design decisions in solving the problem I had brought to him. We placed the description of his experience in the narrative of that aspect of the design, but the description of my influences closer to the beginning of the design case. Providing these descriptions gave reviewers the information they needed to understand the influences relevant to the design. Reviewers were open to how we wanted to frame that information and where in the case we felt it was needed.

Discussions of readings, previous designs, theoretical perspectives, and training influential in the designers' thinking can elucidate the perspectives of the designers, in turn helping readers grasp the perspective of the case. This practice is closer to practices in naturalistic research than it is to forms of scientific writing that report experimental research (Boling, 2010). In most cases a team has come together to create the design. Reviewers are often curious to know how the design team was comprised, especially if it was specifically recruited for the project. The narrative about how I recruited my colleague to solve the critical incident was brief but important, because the solution he chose was very much related to his experiences and training. The experiences

and perspectives that are brought to the design are a crucial part of a design case because readers need to know what skills sets were brought to the design in order to follow the rationale and see the relationships between the design team and the choices the design team came up with.

Why might readers find this design case interesting?

It is important to acknowledge why you want to write the case and to understand, and provide for, unanticipated interest from readers. The aspect of my design which I found most interesting was the resulting discussion among pre-service teachers, but the reviewers were more interested in how I created the total design. This question has challenged other authors as well. Like a number of other authors, I did not state how the case might prove useful to another designer in my original submission. During the revisions I found myself moving a number of statements about possible audiences from the conclusion to the introduction, and then putting something forward which was relatively vague, “for those who want to see learners in engaging discussions about pedagogy.” Uncomfortable as it is, authors must state why they feel their case is worth reading and who they envision finding it useful, even though they cannot pinpoint the most valuable part of their case for readers.

We cannot pinpoint who will find the case most useful because the utility of a case is determined by those who use it, not the writer of the design case (Smith, 2010). Design cases serve very different purposes for different readers (Rowland, 2007). Identifying what insights readers might find useful puts focus behind the presentation of the case right from the opening paragraphs. An excellent example is Mulcahy’s (2011, this issue) design case focused on a simulation design. He was driven to write the case because of a disjoint between what he felt was a design failure, and the accolades the project received. Readers will surely find precedent in his design decisions, but his design choices are not what drove him to write the design case. What made the story of the design worth telling for Mulcahy is the questions his design case raises, and these questions guide the themes within his case, allowing the reader to experience one train of thought in an otherwise complex narrative. This approach allows the reader to take precedent where they find it within the narrative, but also allows the case to be a single, unified statement.

It is not expected that the aspects of a design case which excite the authors are precisely what reviewers see as the case’s true points of merit. I was excited to write my design case because I felt it was novel, but novelty is not necessarily an asset to a design case. A design that is unusual or new forces the author to explain its complexity with more precision. Reviewers of my design case were less interested in the new aspects of the design (viz.: video annotations) than they were in how I had addressed recurrent issues that plagued the design genre (viz.: asynchronous discussions). In other words, reviewers were interested in what new ways old problems could be tackled. The media choices were less important than the rationale behind them and the design’s ability to

address larger and recurrent issues. Newby, Ertmer and Kenny (2010) experienced the same when they discussed strategies they used to overcome obstacles in making groups for international group-work. By creating a system of tiers of project managers within smaller groups, they facilitated work across non-overlapping semester schedules at different universities in dramatically different time zones. This was a complex but new solution to a problem always faced in international group work. Reviewers focused in on these discussions in their design case, but were less concerned with explanations of their end product, a wiki.

Describing the design

Would other modalities express your design directly? Images? Video? Audio? Interactions?

Without mode-appropriate assets supporting the presentation, the design itself might be hard to imagine, even with rich textual descriptions. Naturalistic media, such as photographs, are full of detail, many of these details inexpressible in verbal communication (Kress & Van Leeuwen, 2006). Photos are not the only option, and perhaps not the most desirable option for cases that focus on other modalities. I first proposed the article in storyboard form with clear indications that much of the design case would be a narrated video and would include user navigation. I chose an interactive format with video assets to present my design because understanding the design depended on experiencing the two different kinds of videos. The first video asset was un-annotated, and the second contained annotation. Only through seeing both could the audience of the design case appreciate that the experience of watching the two was fundamentally different. A design case which focused on other modes would need to make use of different modalities to express the design.

In a design case written to describe how a collaborative internet-mediated song was created using emailed recordings made with basic software, Frank (2008) uses audio to compliment his text. Figure 1 presents an excerpt from the design case where the author presents audio artifacts across from his reflections. He describes what he was thinking when the artifact was created, but the audio impacts our understanding of his language. Notice in the upper left hand box that he has described the audio track as a “sketch.” It might be difficult for readers to imagine an audio sketch until they listen to the track. His meaning becomes clear through the audio asset. The author also uses the term “favorite” (bottom left), which is valuable because it drove design decisions. The author cannot express the contrast between voices without the audio clips, and the meaning of “favorite” here is specific within the context of the design. These nuances which tie the design case together are only accessible through the audio.

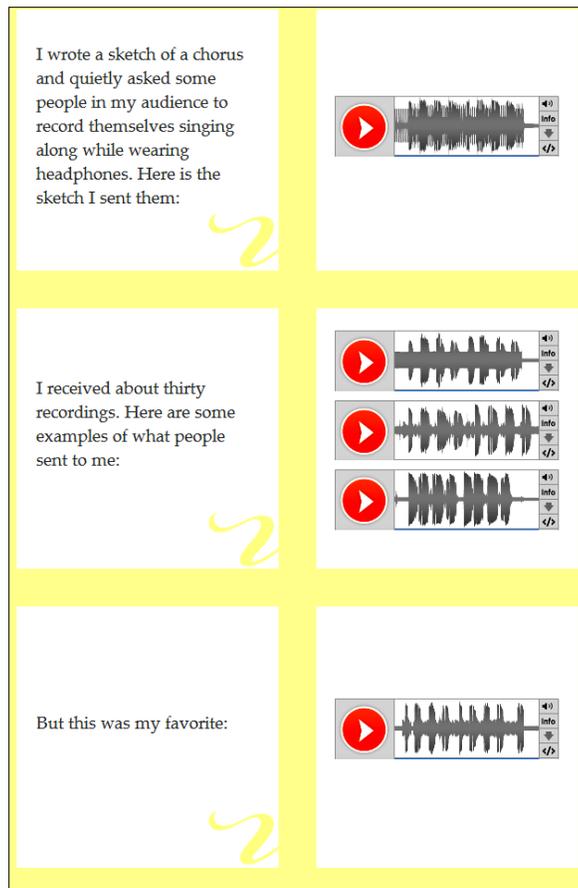


Figure 1: A design case presentation of audio development for the *chill out song*. Frank, Z. (2010) the chill out song. Interactive Multimedia (<http://www.zefrank.com/chillout/>).

Alternative modality assets do not have to be restricted to pictures of a design, people using a design, or to multimedia products. Design components which are texts themselves, such as rubrics, can be shown through their progression with changes visually highlighted, or highlighted through audio narration. I included graphics developed from textual artifacts because I had read a number of reviews asking for graphics, even when the designs being discussed were embodied in texts. Figure 3 shows two graphics which depict textual documents. The textual artifact on the left was made using simple visual indicators while in the artifact on the right, audio narration highlighted developments in the document (Howard & Myers 2011, Tracey & Unger, 2010).

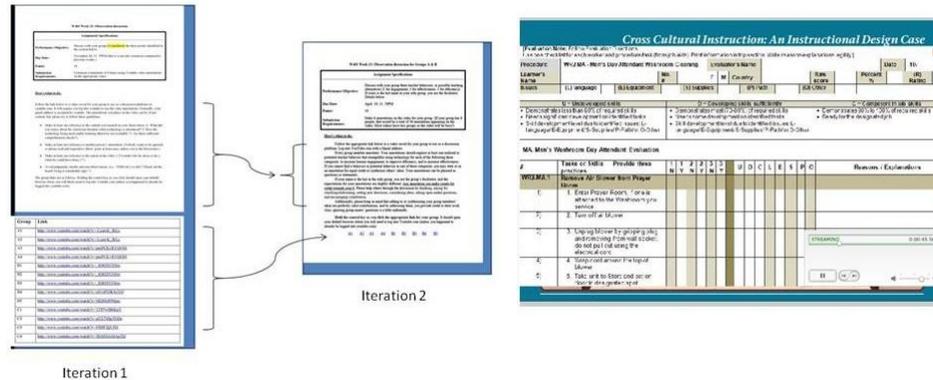


Figure 2: Two visual artifacts made from developed texts for use in design cases (Howard & Myers, 2011; Tracey & Unger, 2010).

Can you present a concrete illustration of the finished design, including the complex and intangible parts?

Presenting a design for learning often includes figuring out how to present intangible aspects of the design in conjunction with tangible parts. When a reviewer asked after the initial submission, “So what exactly are the components of this design?” it led me to think of the intangibles as components rather than as aspects of the development narrative. I created a diagram by showing the intangibles as icons and created relations between them using arrows. Intangible aspects of my design could not be captured in perfectly appropriate icons. For example, *the assessment tool*, a php script, was simply represented by a cube with lines, reminiscent of a computer tower. The relations were a little easier to represent with arrows. In figure 3, *the assessment tool*, an intangible, impacts and is impacted by *the section of media*—so this relationship is represented by a bidirectional arrow. On the other hand, *the learners’ actual discussion* impacts the scientific study but the scientific study did not impact the discussion. Therefore, that relationship is represented by a single direction arrow.

The diagram also served to facilitate the narrative of development. Following the diagram, I discussed each component separately in its totality. Presenting a design’s development purely chronologically appears the logical choice until the complexity of the relationships between design tasks forces the author to organize the presentation in some other way. I found creating a *concrete illustration* the most difficult aspect of writing the design case because my lived experience of creating the design was a sequence of interrelated events, not separate parts. Reorganizing the narrative by components provided a more straightforward approach. From the perspective of the reader, when decisions about different aspects of a design are presented in tandem as they were lived, the complex narrative becomes hard to follow. Dependencies between parts are hard to remember when following the text of an extended narrative. The bidirectional arrows between components signify joint

development or repeated toggles between design tasks. Single arrowheads signify completion of one component feeding into another component's development or into the learning experience itself. Workflow on multiple tasks in this design, as in many others, was not necessarily linear, but often co-dependent between tasks. A chronological recount would present the false impression that one area was the starting point when actually I did not want to suggest that. In my case, a diagram of the total design was the strategy I used to conceptualize the whole. How to holistically express the design beyond the narrative is something every complex design case must grapple with. A diagram is one strategy to talk about intangibles, process and unify different aspects of a design.

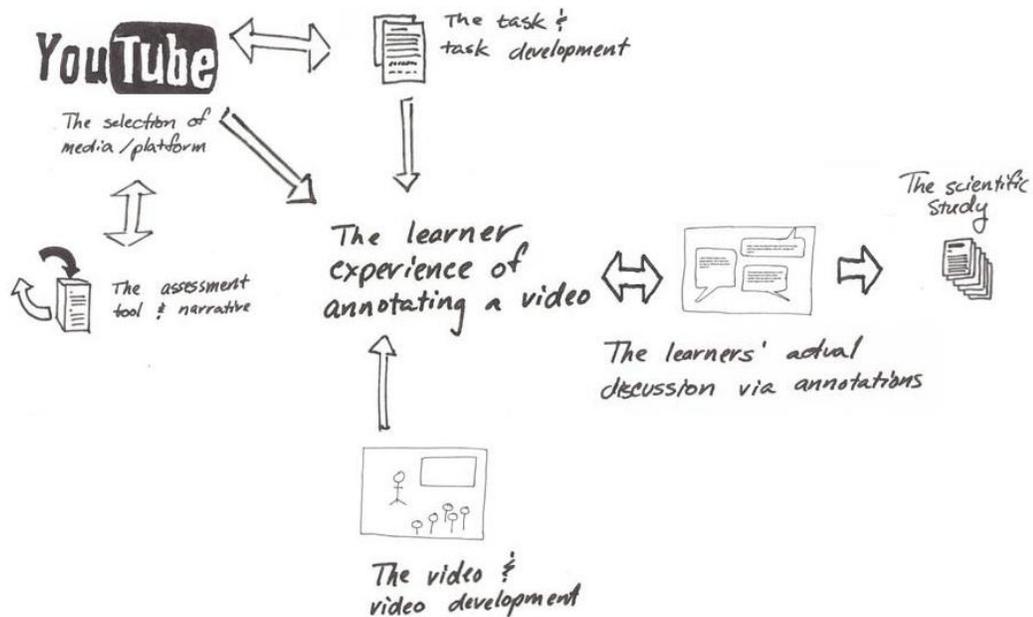


Figure 3: A graphic organizer artifact developed to help conceptualize a design.

Depicting the experience of the design

Can you describe the user experience?

The learner experience is “imagining the journey of a learner's experience in engaging with a finished design” (Parrish, 2006, p. 74). Of course individual learners experienced my design differently; however, reviewers asked me direct questions such as, “What does the learner actually see? Can they stop? Who do they talk to?” I imagined the typical learner's experience and described what I guessed was likely to be seen, felt, and done during the course of the experience. Including the user experience in a design case provides the reader with a perspective which the author can use to show where different features of

a design interact with the learner. It can also be used to draw distinctions between features to explain how they support learning.

Describing the user experience provided a clarification of the nature of design features. Users will not interact with all the components of a design all the time. In fact, some components may not be meant to interact with the learners at all but are still essential to the design. In my own design case, the user never experienced the assessment tool (see figure 3), a php script which the co-author of the design case created to record and time-stamp participation in the video annotated discussion. While the assessment tool was essential to the efficacy of the design because it supported the teacher and provided a key affordance—data collection—it was not part of the learner experience. Because it made grading possible, my final design hinged on the assessment tool, even though it did not directly impact the learner experience. Components such as these have been called soft scaffolds if they are meant to support the teacher rather than directly supporting the student (Brush & Saye, 2002). A clear description of the user experience can help distinguish these components from others and expose relationships with more visible design components in a complex design.

Are you confounding performance measures with “results”?

While a transparent discussion of a design may well take into account the performances demonstrated during the task, these are not results in the sense that we have results in scientific, experimental studies. Thinking of performance measures this way led me, as well as a number of other authors, down a fruitless path. Like other authors new to design cases for learning, I was looking for results to document and present. I saw the final discussion as the “results,” so I counted words and annotations and reported these using descriptive statistics. However, in truth, if there was any “result” from a design case, it would be the design itself, not the performance measures. In some traditional modes, the only interesting aspect of a design is the learning outcomes, “did people learn and if so, how much?” Building knowledge through design cases aims to answer a different question, “how did this instantiation of an intervention come about, and what design resulted from the process?” Data on the ultimate effectiveness may be interesting, but performance measures do not necessarily validate, or invalidate, the aspects of how that intervention was created.

Performance measures tell us a partial story of learners’ experiences; they partially express what happened within the particular design in a particular context. Within the context of a design case, they do not tell us about a theory, nor do they tell us about how the design would function if recreated by another designer (Boling, 2010; Rowland, 2007). In a design case, performance measures are non-transferable, and represent the ultimate particular (Stolterman, 2008). The statistics of the numbers of words produced, the numbers of annotations, and the amount of time spent on task in my discussion of the design described

an aspect of the design (viz.: the user experience) rather than measured the outcome of the design process. This realization came when I answered questions about my design case after it was published and I saw other authors struggle with writing results sections in their own cases. Performance measures may describe part of the user experience, but they are not essential to understanding a design.

From reading educator-authors revisions, and experiencing confusion myself surrounding how performance measures fit into a design case, I feel the problem arises from how new authors view design cases in relation to scientific experimental studies in education. A designer who is also a researcher must recognize the difference in perspective between a design case and an experimental study which uses a design for teaching and learning. In a scientific experimental study used for educational research there is often a design that generates data. The design is part of the study. In a design case however, the study becomes a component of the design. In figure 3, the scientific study appears on the far right as a component of the design. It may have been because the production of scientific data was an essential affordance of my design that I had mistaken the performance measures for results. The requirements of the scientific study had a very limited role in impacting media choices, the development of the assessment tool and certain features of the assignment, so I admit a soft line could be drawn from the study component to the others. However, the completed discussion directly provided data for the scientific study, but not for the design. It was the difference in perspective that I had not grasped which caused this confusion between performance measures and results. I had planned during the design that performance measures would be extractable from the learners' discussions to enable a scientific study, but this did not mean the result of the design case was the discussions. In the context of an experimental scientific study, the measures I used could be results. However, in the context of a design case, performance measures are not results; the result is the design.

Transparency in the analysis

How has the design failed?

Cases with no discussion of the failures of the design appear as advertisements rather than rigorous studies of real designs (Smith, 2010). Design failures may also be the most interesting aspects of the case for readers who share common dilemmas, constraints, goals or contexts. Readers want to know what you uncovered when you looked critically at your design and your design process. Notes I had taken while I was creating the intervention helped in writing parts of the narratives that suggested process failures. I had noted that I should have saved video clips in a systematic order with labels that described the abstract concept the clip exemplified, and that other software choices might have made the creation of the teaching videos more effecting and engaging.

These provided for discussion of my process of designing, but they did not lend to the analysis of the design itself. Identifying failures in my design process was less challenging than identifying failures in the performance of the finished product. I felt my design had done what I wanted it to do. While it seemed reviewers could not foretell specific design failures from my initial submission, their probing questions suggested I had not asked other stakeholders about their experience of the design, and I could not yet know the failures. Just because the design had accomplished the task did not mean it was without need for improvement. They suggested I ask other people about the failures of the design.

Perspectives from outside the design team helped to uncover failures that I had not originally seen. Only after discussions with the other teacher who had used the design could I see where the design had failed. The other teacher of the course was a stakeholder I had not consulted in the initial write up of the case. Her contribution turned out to be essential to writing an honest discussion of design failures. The other teacher of the course had experienced not being able to give students quick, accurate directions on how to login and use the video annotation system. She also did not know how to collect the annotations and grade them using the tool. Where my design had failed was not in the user experience, but in providing the other teacher of the course with enough support to feel the product was a tool she could easily use. Essentially she was a stakeholder I had forgotten during the design and the design itself consequently overlooked. The probability that different stakeholders characterize success and failure differently is high; this tactic may serve other authors well in uncovering a design's shortcomings.

Like other manuscripts I have seen, a thorough discussion of design failures was the weakest part of my initial draft. Acknowledging outside perspectives lends to the transparency of the case. While we often envision the task of creating rigorous research a solitary one, the only route for me to see these other perspectives was dialogue.

Design *failures* may be an unfortunate, and sometimes misleading, term. The failure of a design to produce the expected results in one context may turn out to be a design's strength in another context (Krippendorf, 2006). Failures are not necessarily the fault of the designer, and the term is not meant to convey blame. Some reviewers have seemed to avoid the term design failures, presumably because educators sometimes interpret the term to imply failed teaching, which it does not. Other questions aimed at a transparent discussion of design failures are, "How has the design manifested unexpected experiences?" or "in what ways might this design be improved?" Authors of design cases should not be surprised if reviewers ask about design failures; they are the most common request I have seen in reviews.

Have you done justice to the complexity of the issues related to the design?

Strategies to uncover design decisions can expose complexities of the design which might have gone unnoticed. If the designer is the one writing the case, dialogue can expose curiosities the reader brings but the writer/designer simply has not thought to include. I was so deep in the design process that some decisions were taken as a matter of course. Assumed rules of practice can dictate choices almost unconsciously, even when the impetus of those practices has since disappeared (Fanselow, 1987). My co-author recognized design decisions I had not deliberated on during the process of design and had left out of the initial draft. For example, I had not considered any other alternative to starting with an informal usability test. For me this was not a design decision; for him it was. The observations from the usability test led me to creating a video tutorial which it turns out I may not have actually needed. YouTube changed the interface while my task was assigned, but learners managed to coach each other using the annotations themselves. My design case never questioned usability testing as a departure point, but perhaps it should have. A stakeholder, the reviewers, and my co-author (who was the rest of the design team), helped uncover things I would have not thought to include as decisions. The dialogues revealed essential parts of the case which I had not initially considered, and brought up a larger issue. The learners' overcoming the change in interface midway through the task raised questions about my assumed one-size-fits all starting point.

Items often removed from design cases

The categories in this article up to this point have all included common questions knowledgeable reviewers have posed to me and other authors of design cases. This category is different. These subsections are not questions because reviewers do not ask questions on these topics. Rather, they often ask that these topics be removed or reworked into a different perspective.

Methods and research question sections

Rich descriptions of the design moves which culminated in the finished design are the development narrative, not methods as the term traditionally implies. Some authors have titled the narrative "methods" to imply a method of design, but reviewers interpret the section as a statement of research method. Design cases are representations of knowledge which develop naturalistically as the designer or someone close to the design collects key artifacts and reflects on the reasoning behind decisions and the efficacy of those decisions (Boling, 2010). Rich descriptions describe the design process, and sometimes they include reference to process models the designers used. This does not make these rich descriptions research methods. I put references to scholarly publications in my description of the design team because the readings

influenced my design. I actively avoided the term “methods” because I had read so many reviews and seen subsequent revisions grapple with finding a common understanding of the term within the context of a design case.

The motives behind writing a design case are not the same as those for scientific studies. Scientific studies ask research questions, but research questions are awkward in a design case because design cases only ask one question, “How did the design come to be as it is?” (Boling, 2010; Howard & Myers, 2011; Smith, 2010). Authors have reworked what they originally thought of as research questions into problem statements (Hosack, 2010) or even statements that express the authors’ desire to share the precedent they believe was created in the project (Paulus & Spence, 2010). The motive behind my case was a desire to share what I felt was a curious new medium, but Rowland, Hamilton and Morales (2011, this issue) saw their design case as an opportunity to address the complexities brought up in a process which used systems principles for a complex real-world design. However, none of the design cases in this issue contain “research questions.”

Design guidelines, lessons learned, and design principles

It is hard to ignore the irony in prescribing to others that they should not write prescriptions. However, reviewers have suggested in my case, and in others, that blanket guidelines tend to oversimplify the design process and work against the transparency of a design case. The rationale behind this is presumably that it is difficult to draw probabilistic design principles from one single case, but prescriptions in design cases are on shaky grounds for other reasons as well. The goal of writing design cases is not to collect enough of them for “real research” to have data sets; rather, it is to share design knowledge that is so tightly connected to the complexities of particulars that it cannot be generalized to other cases. Design knowledge need not be generalizable to be valid. What may seem like a handy design guideline now may not stand the test of time, may be useful primarily in building your design judgment, or develop into part of your design philosophy (Boling & Smith, 2008). Since readers will take away the most useful precedent they find in a design case anyway, design guidelines, lessons learned, and prescriptions only obscure the trustworthiness of a design case, especially if the reader does not interpret the case as directly feeding into the stated prescription.

Conclusion

While I was used to having in-depth discussions about teaching, finding the tensions and then weighing competing goals within interventions I had created, I was far less used to actually representing designs in all their complexity to someone removed from my own teaching context. Describing a total pedagogical design is difficult, and like many educators, I was not trained to talk about teaching and learning in this way. Teachers skip details in their

descriptions; perhaps because there are often thousands of decisions being made during one instance of a learning design. Perhaps it is because other teachers share a knowledge base and some things are assumed. Perhaps it is because I had been taught that only certain types of studies are pertinent to educational scholarship, such as studies which directly inform theories.

Design cases are knowledge building of a different sort. A large portion of educational research follows the scientific tradition; design cases follow the design tradition. Consequently, educators eager to share their designs often do not know where to start. This change of gears can be frustrating for seasoned authors who are comfortable in the scientific format (Ertmer, personal communication). A common misconception is that design cases are not *real* knowledge building at all. We need to be careful to consider rigorous design cases as true scholarly work, because they are. Design cases are empirical in the same sense that scientific studies are; they are based on observances. This does not mean design cases should appear in the same *format* as studies focused on creating scientific generalizable knowledge. The format need not be set in stone, but is intrinsically linked to the larger mission of the *International Journal of Designs for Learning* (IJDL). The design cases in IJDL build knowledge in a fundamentally different way than has been done in the past in education; we should expect them to *look different*. As authors, reviewers and readers craft the new discussion, the format of the design case for learning will surely develop. This is an exciting time to be part of building our collective knowledge about creating designs for learning.

References

- Boling, E. (2010). The need for design cases: Disseminating design knowledge. *International Journal of Designs for Learning*, 1(1), 1-8. Retrieved from <http://scholarworks.iu.edu/journals/index.php/ijdl/index>.
- Boling, E., & Smith, K. M. (2008). Exploring standards of rigour for design cases. Paper presented at the Design Research Society Conference Undisciplined!, Sheffield Hallam University, Sheffield, UK.
- Brush, T. A., & Saye, J. W. (2002). A summary of research exploring hard and soft scaffolding for teachers and students using a multimedia supported learning environment. *Journal of Interactive Online Learning*, 1(2), 1-12.
- Cross, N., (2007). *Designerly Ways of Knowing*. Birkhäuser: Basel, Switzerland.
- Fanselow, John F. (1987). *Breaking rules: Generating and exploring alternatives in language teaching*. White Plains, New York: Longman.
- Frank, Z. (2008). Chillout Song. *Zefrank.com*. Retrieved September 23, 2011, from <http://zefrank.com/chillout>.

- Howard, C. D., & Myers, R. D. (2010). Creating video-annotated discussions: An asynchronous alternative. *International Journal of Designs for Learning*, 1(1), multimedia: <http://scholarworks.iu.edu/journals/index.php/ijdl/index>.
- Howard, C.D. & Myers, R.D. (2011) A design case: Creating a video annotated teaching observation. Paper presented at the annual meeting of the American Educational Research Association. New Orleans, LA. April.
- Hosack, B. (2010). VideoANT: Extending online video annotation beyond content delivery. *Tech Trends*, 54(3), 45-49.
- Kress, G. & van Leeuwen, T. (2006) *Reading images: The grammar of visual design*. Routledge: New York.
- Krippendorff, K. (2006). *The Semantic Turn: A New Foundation for Design*. Boca Raton, FL: CRC Press.
- Lawson, B. (2004). Schemata, gambits and precedent: Some factors in design expertise. *Design Studies*, 25(5), 443-457.
- Mayer, R. E. (2005). *The Cambridge handbook of multimedia learning*. Cambridge Cambridge University Press.
- Mulcahy, R. S. (2011). Bottom Line: Defining Success in the Creation of a Business Simulation. *International Journal of Designs for Learning*, 2(1), 1-17.
- Parrish, P. (2006). Design as storytelling. *TechTrends*, 50(4), 72-82.
- Paulus, T., & Spence, M. (2010). Using blogs to identify misconceptions in a large undergraduate nutrition Course. *TechTrends*, 54(5), 62-68.
- Rowland, G. (2007). Educational inquiry in transition: Research and design. *Educational Technology*, 47(2) 14-28.
- Smith, K. M. (2010). Producing the rigorous design case. *International Journal of Designs for Learning*, 1(1), 9-20.
- Stolterman, E. (2008). The nature of design practice and implications for interaction design research. *International Journal of Design*, 2(1), 55-65.
- Tracey, M. W. & Unger, K. L. (2010) Cross Cultural Instruction: An Instructional Design Case. *International Journal of Designs for Learning* (1) 1, multimedia. <http://scholarworks.iu.edu/journals/index.php/ijdl/index>.