"The ADDIE Model" – A Metaphor for the Lack of Clarity in the field of IDT

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Indiana University, where I am an associate professor in the Department of Instructional Systems Technology (IST), has a School of Library and Information Sciences, a Department of Telecommunications, a School of Informatics was opened several years ago, and this year the university launched a Ph.D. program in Learning Sciences. The growing number of programs related to the field of instructional design and technology (IDT) is one of the main reasons why I am currently experiencing a discomforting level of uncertainty regarding the focus of the field, and I find myself wondering how we who work in the field of instructional design and technology add value to the generation of knowledge among all of these related fields.

Concern about the lack of focus in the field of IDT

I am not alone in my uncertainty about the boundaries and focus of the field. One of the most well-attended sessions during the 2004 Conference of the Association for Educational Communications and Technology (AECT) in Chicago was a panel discussion between instructional technologists and learning scientists in order to help discern what, if any, are the differences between the two fields of study. The panel discussion was the outgrowth of a special issue of Educational Technology magazine edited by Carr-Chellman and Hoadley (2004) that included commentary from academics representing both groups about the commonalities and differences between the two fields.

Academics are not the only group experiencing discomfort and uncertainty about the focus and value of the field of IDT. Practitioners face struggles that result from the lack of congruity between theory, research and practice in IDT. Schwier, Campbell and Kenny (2004) noted that "much of the extensive work describing theoretical models of instructional design (ID) has not been drawn from the practice of the instructional designer and consequently, instructional design theory is not grounded in practice" (p. 1). Cox and Osguthorpe (2003) conducted a survey of 142 practitioners in order to determine how instructional designers spend their time, a study which they designed because they had "not been able to locate research that asks designers how they actually spend their professional time" (p. 45). These researchers note that there seems to be a "dearth of ethnographic research on the practice of instructional design" and express their "hope that those in instructional design and technology will become increasingly committed to studying the profession by examining the living practice as it changes and grows" (p. 47).

It should come as no surprise then, that joining academics and practitioners in their sense of confusion about the focus of the field of instructional design and technology are graduate students in some of the most well respected programs in the United States. Smith, Hessing and Bichelmeyer (2004) administered a survey to 170 graduate students in eight of the oldest and largest IDT programs in the U.S., and asked respondents to describe what the field of instructional design and technology means to them. Data from this open-ended item were analyzed using the constant comparative method to identify emergent themes, resulting in 14 categories of responses. By far the greatest number of responses to the question fit into a category labeled by the researchers as "Broad/Non-uniform." A few examples of the types of responses that were grouped into this category are:

- "A really broad group of people trying to be unified when they have very different visions of what IDT really is. Consequently, we struggle to explain to people what exactly it is that we do and what exactly it is that we are and represent."

- "A diverse field where too many individuals try and play too many different roles and end up being master of none. 'Graphic design? Oh yeah, I can do that. Computer science? Yeah, I could figure it out. Information systems? Sure why not I deal with computers.' You get the picture. There are also a lot of feeble attempts when it comes to scientific research."

- "As much as people in the field don't like to admit it, I feel that IDT is really an interdisciplinary field that deals with identifying instructional problems and creating solutions to remedy those problems."

Given the available evidence, it unfortunately does not seem to be an overstatement to claim that professionals of all types in the field of IDT, including academics, practitioners and students, do not see the field as having a consensus definition, clear focus, distinct boundaries, established links between research and practice, or any obvious added value when compared to other fields. Given this confused state of affairs, one might legitimately ask, is there any sort of core to the field of IDT that can serve as a foundation from which to build upon?

The core of IDT: "The ADDIE Model"
If you believe as an old proverb claims, that many a truth is spoken in jest, then what are we to make of this joke from Debbie Gulick, a student in Learning and Performance Systems at Pennsylvania State University?
Why did the instructional designer cross the road?
To get to the ADDIE side.

Taken literally, the joke tells us that instructional designers are on the side of ADDIE. Metaphorically, we could interpret this joke to mean that ADDIE is a foundational element of the field of IDT. We don't have to look far to find evidence that supports this interpretation.
A Google search using the term "ADDIE model" (January 12, 2005) generated more than 32,000 hits. A scan of these hits clearly indicates that the concept of "the ADDIE model" is inexorably linked to the field of instructional design. References come from universities, consulting companies, professional organizations, books, presentations, journal articles, and all sorts of other sources. Just a few examples are needed to make the importance of the IDT-ADDIE relationship clear:
- A summary of the September 2004 meeting of the Austin Texas chapter of the Society for Technical Communication notes that "technical writers are using *a key instructional design methodology*, *the ADDIE model,* when they develop technical documentation" (http://www.stcaustin.org/meetings/sep04_fr.html, retrieved January 12, 2005).

- A definition of "design" in Seslisozluk, the Turkish online dictionary, refers to "the *classic A-D-D-I-E model* of Instructional System Design" (http://www.seslisozluk.com/search/design, retrieved January 12, 2005).

- The description of the Centenary College course "Instructional Design for K-12 Educators" states that "Students will apply *the ADDIE instructional design model …*" (http://www.centenarycollege.edu/academics_grad_malearningtech_coursedescr.php, retrieved January 12, 2005).

The Hessing, Smith & Bichelmeyer (2004) survey cited above provides additional and more direct evidence of the inextricable link between the field of IDT and the concept of the ADDIE model. The second-most frequent group of responses by graduate students to the question "what does the field of IDT mean to you?" (following closely on the heels of the "broad/non-uniform" category) was the group of responses labeled as "ADDIE." Responses that were categorized into this group included variants of such statements as "It is the liberal application of ADDIE-like models to training and non-training problems..."; and the tongue-in-cheek reference to the ADDIE model's role in ruling the world by the student who wrote that the field of IDT is "The systematic approach to design, development, evaluation, and management of everything."

One further indication of the ubiquity of the ADDIE model within the field of IDT may be found in the fact that the author didn't even consider the need to define the acronym until the final edit of the manuscript. For any instructional designer who is not familiar with the acronym, it stands for Analysis-Design-Development-Implementation-Evaluation. (If there is an instructional designer somewhere in the world who did not know of the ADDIE model until reading this document, please e-mail the author, bic@indiana.edu, for a follow-up interview.)

In the current state of confusion regarding the boundaries and focus of the field of IDT, we may be able to take some comfort from the fact that there appears to be a large consensus among IDT professionals who view the ADDIE model as a foundational element of the field. The ADDIE model may be a starting point from which to build a broader consensus that could lead to a clearer, stronger sense of how the field of IDT is unique and adds value among other, newer fields. Perhaps then, we should examine the ADDIE model in more detail to help us get a better sense of the core of our field.

Strengths and limitations of the ADDIE Model

The great strength of the ADDIE Model is implied in the title we give it. A model is a template, a structure, an approach to be used. Barbara Grabowski provided a historical context for the value of the ADDIE model by explaining, "I grew up before ADDIE, when there was IDI, ISDP, SET" (these acronyms describe a variety of specific and particular approaches to instructional design). "What ADDIE did for me and other instructional designers was to put all the little pieces of all the different instructional design models into a bigger picture. ADDIE was a nice way of putting my nine steps into five. For its time, what was good about ADDIE was to put discrete bits of information into an overarching framework" (personal communication, February 28, 2004).

Despite its hallowed place in IDT, various members of the field over the years have pointed out a number of compelling criticisms of the ADDIE model. Chief among

these criticisms are that the ADDIE model is ineffective and inefficient (Gordon and Zemke, 2000), meaning that it does not necessarily lead to the best instructional solutions, nor does it provide solutions in a timely or efficient manner. In addition to being costly, in recent years the ADDIE model has been criticized because it doesn't take advantage of digital technologies that allow for less-linear approaches to instructional design such as rapid prototyping (Tripp & Bichelmeyer, 1991). Perhaps most importantly, Rowland (1993) has pointed out that the ADDIE model is not really the way instructional designers do their work.

There is no way around the fact that these are damning criticisms. In summary, these criticisms say that the primary model of instructional design in the field of IDT does not guarantee quality, does not work efficiently, is out of date, and doesn't even reflect the real work of instructional design. Yet, in spite of such withering criticisms, the ADDIE model continues to hold a consensus view as a foundational element of the field. This paradoxical situation should lead us to ask, what makes the ADDIE model strong enough to withstand such damning criticism?

What the ADDIE MODEL isn't – A model

In order to answer this question, it is important to know something about the origin and development of the ADDIE model. Unfortunately, this leads us away from the clarity and focus for which we have been striving and back into the murky waters of uncertainty and confusion.

In a 2003 article titled "In Search of the Elusive ADDIE Model," Michael Molenda, associate professor of Instructional Systems Technology at Indiana University and historian of the field, documented his effort to track down the original reference to the ADDIE model and his subsequent reflections about that effort.

Molenda's exhaustive search found no original reference for the ADDIE model - not in any dictionary, not in any encyclopedia, not in any histories of the field, not in any textbooks, and not in any professor's memory. This lack of an original reference led Molenda to write, "I was beginning to form a theory that ADDIE exists as a label rather than as an actual ID model."

By definition, a model is a representation that accurately resembles an existing structure. One would assume then, that the ADDIE model would be a representation that reflects an existing structure for instructional design. Yet, Molenda's sleuthing showed there was no original ADDIE model. Further, Rowland and others have criticized the ADDIE model because it is not representative of what instructional designers do. If no original ADDIE model exists, and if ADDIE does not represent what instructional designers do, then the inevitable conclusion must be that ADDIE is not a model at all. But if ADDIE is not a model, then what is it?

What ADDIE is – A conceptual framework

An answer to the question of what ADDIE is may best be gleaned by considering its purpose rather than its origins or development. Help in this pursuit comes from Elizabeth Boling, associate professor of Instructional Systems Technology at Indiana University, who holds a masters degree in fine arts, and came to the field of IDT with a background in visual design and production. In a conversation on the topic of ADDIE among several IDT faculty, Professor Boling commented, "I was so puzzled when I

started in this field – the ADDIE model is just exactly like every other generic description of the design process in every other field that ever was. To me, [the important] discussion is … not about whether ADDIE stays or goes, but whether or not ADDIE is viewed appropriately – we're trying to make it serve as a roadmap – you can't use it effectively as a literal road map for ID..." (personal communication, February 28, 2004).

Molenda came to a similar conclusion after his fruitless search for the elusive ADDIE model, stating, "I am satisfied at this point to conclude that the ADDIE model is merely a colloquial term used to describe a systematic approach to instructional design, virtually synonymous with ISD" (Instructional Systems Design)" (p. 37).

Despite the vast number of references to "the ADDIE model" on the internet, in textbooks, in journal articles, in conference presentations, and in professional discourse, it turns out that ADDIE is not a model at all. Molenda has concluded that ADDIE is a label, a colloquial term used to describe a systematic approach to instructional design. Boling has referred to ADDIE as a generic description of the design process. One might also think of it as a conceptual framework for instructional design, a mental frame of reference that loosely guides instructional designers as they attempt to approach instructional design problems in a systematic way.

So, ADDIE is a framework, not a model. But really, isn't this just semantics? Who really cares whether we call ADDIE a model or a framework? And really, does such a distinction matter in any important way, after all?

What we call ADDIE matters – And why

Yes, whether we call ADDIE a model or a framework matters. It matters a great deal, actually, and this is why. First, to recap the argument of this paper: IDT is a field which is being inundated by other fields. Those of us who work in the field of IDT don't have a clear focus or vision of how we are unique and add value in relation to these other fields. One area where there does appear to be a consensus among IDT professionals is that we consider the ADDIE model to be a core element of our field. However, the ADDIE model is criticized as not being effective, efficient, or even what instructional designers really do. It turns out, the ADDIE model isn't even a model! What we perceive as a core element of our field, one of the few things that we seem to agree upon, is not what we assume it to be at all! We have spent years attempting to build a knowledge base about something that doesn't represent reality! This might help to explain why we aren't viewed by professionals in other fields as legitimate. It might also explain why we question whether the field adds value. It certainly might explain why we have the sense that the field isn't moving forward in any coherent way. How can we possibly hope to build a field based on something that doesn't represent reality?

So, what should we do? We can start by recognizing that ADDIE is not a model, but rather a conceptual framework, and we can begin to explore the many manifestations of this conceptual framework in its everyday settings. In other words, we can become a field that cares about and studies the actual work that professionals engage in when they design instruction. We can become a field that aspires to a science of instructional design, a science that describes what the processes of instructional design actually look like, evaluates the strengths and weaknesses of various processes of instructional design, that explores the causal linkages between the processes of instructional design and the implementation of successful instruction, and finally, based on such knowledge, is able to

prescribe processes of instructional design that make a real and sustained contribution to education in all its forms.

If we were to become such a field, I believe our preoccupation with how we relate to other fields and our concern about adding value would disappear. As I have posited elsewhere (Bichelmeyer, 2004), we would be addressing an area of study that no other field addresses. We would be rooted in and focused on a subject at the core of our field – we would be advancing knowledge about the processes of instructional design.

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