The Third Dimension of ADDIE: A Cultural Embrace

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INTRODUCTION

If education is inherently a process that involves human interaction with the deliberate purpose of promoting the social values, norms, and mores of a given society, then we can state that the knowledge a society chooses to convey says something about the culture of that society. In this way, we can conceive of education as being a process that is fundamentally socio-cultural in nature.

We argue that historically many professionals in the field of Instructional Technology have taken a culturally neutral position in the creation of instructional products. By not directly addressing culture in the design of instruction, many products have been designed that inadequately address the needs of the population for whom the instruction was designed. Unintended consequences of this shortcoming include the production of ineffective instructional products, the under use of potentially effective products, culturally insensitive products, and products that are deemed overtly culturally offensive by some members of certain populations.

The obvious implication of this notion is that the effective design of instruction would have to be grounded in a rich understanding of culture and its essential role in the socially mediated construction of reality.

CULTURE

A thorough understanding of how researchers have defined the construct of culture is important to our growth and development as instructional designers. In this section we examine how researchers have defined culture, and how instructional designers have treated culture within the design process.

WHAT IS CULTURE?

Early definitions of culture considered culture to be a refinement or a flowering in the development of education (Arnold, 1925; Williams, 1993). A cultured person is an educated person. These hierarchical (Alasuutari, 1995) definitions later gave way to social definitions that can trace their origins to the work of Edward Tylor in the later part of the 19th century (Tylor, 1924). In their review of over 160 definitions of culture, Kroeber and Kluckholn (1952) later characterized culture as, “...patterns, explicit and implicit, of and for behavior acquired and transmitted by symbols, constituting the distinctive achievements of human groups, including their embodiments in artifacts; the essential core of culture consists of traditional (i.e. historically derived and selected) ideas and especially their attached values; culture systems may, on the one hand, be considered as products of action, and on the other as conditioning elements of further action.” (Kroeber and Kluckholn, 1952, p. 283). Pai & Adler (1997) have defined the construct of culture as “that pattern of knowledge, skills, behaviors, attitudes, and beliefs, as well as material artifacts, produced by a human society and transmitted from one generation to another” (Pai & Adler, 1997, p. 23). Geertz’s symbolic anthropology considered culture to be a system of interacting symbols and meanings that continually influence one another (Geertz, 1973; Rice, 1980; Smircich, 1983).

In recent years, instructional designers (Powell, 1997a; 1997b; Branch, 1992; Rogoff, 1990; Vygotsky, 1978; Wertsch, 1998). All knowledge, then, is socially mediated and all socialization is grounded in culture. Instead of earlier cognitivist ideas of activating representational schema existing in the human mind (Piaget, 1963), all representations are constructed in situ (Duffy & Jonassen, 1992). Education becomes not a process of conveying knowledge but of co-constructing knowledge in socio-cultural contexts. Interactivity and culture become education and instruction and the co-construction of reality. Although this is still controversial, we can state that whether or not reality itself is constructed, the role of culture is clearly relevant to the design of instruction.
1997) have begun to provide the field of ISD with definitions and process guidelines for incorporating culture into the systemic design of instruction. Powell (1997b) defines culture as “the sum total of ways of living, including values, beliefs, aesthetic standards, linguistic expression, patterns of thinking, behavioral norms, and styles of communication, which a group of people has developed to assure its survival in a particular physical and human environment” (p. 15). Additionally, Powell (1997b) points out that cultures are not static entities because of the interaction that takes place between cultures and the people who part of them. Yon (2000) also speaks to the idea of the elusive and the continually changing aspects of culture. We concur that the ISD process should take into account the dynamic and interactive nature of culture. Therefore, we assert that the process should incorporate a systemic approach to design.

In the field of Instructional Systems Design (ISD), culture has been addressed, yet forgotten in the analysis phase. It is in this phase that the designer must get to know the learner in order to design a product that will meet his/her needs. Getting to know the learner and their culture should not stop at the analysis phase. Instead, the instructional designer should continue to get to know and understand the learner throughout the design process. It is this continual interaction between the instructional designer and the learner that will bring the designer closer to understanding the culture of the learners. Consequently this will lead to the design of a more culturally enriched and sensitive product. It is also critical that the culture of the designer and its connection to that of the learners be explored as static entities as well. We are all part of many interactive and interacting cultures all of which inform the design process.

**Systematic vs. Systemic Design**

Here we will briefly outline the distinction between the terms systematic and systemic as they relate to the design of instruction. The term systematic refers to a linear, piecemeal, orderly design process in which each stage of the process follows a prescribed, logical order (Molenda, Pershing, & Reigeluth, 1996). Many theorists in this area have proposed prescriptive models in order to maximize the effectiveness of instructional materials (Dick & Carey, 1985; Heinich, Molenda, Russell, Smaldino, 1999; Leshin, Pollock, Reigeluth, 1992; Seels & Glasgow, 1990; Seels & Richey, 1994; Romiszowski, 1981; Diamond, 1989).

A systemic design process, by contrast, is an integrated, holistic, multidirectional approach to the design of instruction. A systemic approach to design implies that the designer is constantly aware of the interdependence of the total instructional system, and all its components (Molenda, Pershing, Reigeluth, 1996). The ubiquity of the systemic approach to instructional design and the proliferation of the models employed for this purpose belies a general unanimity on the part of instructional design theorists and practitioners as to what these models should be used for and what elements they should incorporate. Indeed, many instructional models when compared are strikingly similar and few have been rigorously tested (Gustafson & Powell, 1991). Most of these models begin with some sort of analysis of the learners for whom the instruction is designed. Many refer to these models as learner centered design (Corry, Frick, & Hanson, 1997; McKnight, Dillon & Richardson, 1996; Mitchell, 1993).

Richey (1995) points out that the field of instructional systems design has been systematic; however a holistic treatment of the process is essential to the systemic design of instruction. Powell (1997a) and Knupfer (1997) pointed out that too often learner characteristics such as gender, race, and ethnicity have been overlooked.

If culture is at the heart of meaning making and cognition itself, then instructional designers should utilize a systemic design process that is iterative as well as culturally grounded. For a design process to be truly systemic it must consider all components of the system and how the components relate to one another. Therefore, without considering culture, we cannot truly have a design process that is systemic. If a designer, for example, were to design an instructional website for new international students who need help with writing research papers, she

...culture is so much a part of the construction of knowledge that it must underpin not only the analysis phase but all phases of the design process.

**The Third Dimension**

It may be argued that culture is adequately addressed in existing ADDIE (Analysis, Design, Development, Implementation, Evaluation) model structures or in other structures instructional designers have discussed in
of instruction (Gagné, 1985) “have the potential to promote knowledge exchanges from cultural perspectives.” For Branch, culture is adequately addressed in this way. However, newer notions of culture invite further investigation of this treatment.

We have argued that culture is central to meaning making and cognition in general and that instructional designers must, therefore, incorporate culture into the systemic design of instruction.

The ADDIE model began as a two-dimensional model that was monodirectional and linear (Tracey, Flynn, & Legere, 1966; Briggs, 1977; Shrock, 1991) (see Figure 1). Ritchie and Hoffman (1996) attempted to address the rigidity of the ADDIE model by introducing an iterative approach. This change enabled the model to enter into a state of continuous development allowing it to meet the demands of an unstable environment. It then began to be considered bi-directional, iterative and two-dimensional (see Figure 2).

We propose adding another dimension: culture to the ADDIE model (see Figure 3), making it not only iterative and multi-directional but also three dimensional. The third dimension of the ADDIE model would consist of three parameters: intention, interaction, and introspection. Using the ADDIE model as a basic guide, each of the five phases of the ADDIE model can be viewed in terms of these three parameters. In order to understand this third dimension of culture and how it corresponds with the ADDIE model, it is necessary for instructional designers to understand the three I’s: Intention, Interaction and Introspection.

**Intention**

Jonassen, Peck, and Wilson (1999) in their five attributes of meaningful learning identify reflection as part of the intentional attribute of learning. Although it may seem obvious that instructional designers intend to make culturally sensitive products, this is not always the case. Too often the intention is not to make a product that is culturally sensitive or culturally appropriate but culturally neutral. This is often done in an attempt to avoid cultural bias but also occurs as an unhappy consequence of cultural neglect or arrogance. If culture is at the heart of our thoughts and worldview, it is an inescapable element in all that we do, say, feel, wish, and design. Therefore,
nothing is free of culture or cultural bias. Our goal should not be to flee from the notion of culture but to embrace it fully. In every phase of the ADDIE process, we must question our intention to carry out analysis, design, development, implementation and evaluation in a manner that is culturally sensitive and grounded in the notion that culture is inescapable and we must also seek out evidence that the integrity of our intentions remain clear. Clients and stakeholders also influence the intentions of designers and should, therefore, be carefully considered. We must also consider that there are consequences to what we do. Just as the field of testing has embraced an expanded notion of validity in testing to include the consequences of testing (Messick, 1989), the field of instructional design must consider that products create consequences and emerge from processes that are manifestations of very human actions and intentions. Knupfer (1997) in discussing the serious problem of gender inequity in instructional design points out that “Inequalities that result from the practice of instructional design often go unrecognized because they emerge not just as a result of what has been done, but also as a result of what has been left undone” (p.32). Intention is critical to action. It is that intention that must be conveyed when socially negotiating meaning through interaction.

Interaction

Brent Wilson (1995) states, “A key element in effective ID is the nature of the design team” (p.7). Traditionally the design team was composed of the designer and subject matter expert (SME) working as separate distinct entities. This paradigm of design has become outdated and therefore is not as responsive to the diverse needs of culture. We argue that this approach should be replaced with a more constructivist approach whereby the designer, SME, and end user participate collaboratively in the design of instruction thus facilitating the melding of culture into the end product. If culture and thought spring from human interaction and socialization, then any knowledge of culture must be grounded in interaction. Instructional designers must interact with the people for whom they design. If this is not possible, then the designer must seek out those who do have this experience and make use of their expertise. Users, to the greatest extent possible, must be designers. The more interaction with the culture designers have, the more we can hope to understand who we are designing for, and the more culturally appropriate and sensitive our products are likely to be. This must also be considered in all five phases of the ADDIE model.

Introspection

Introspection is the reflective prac-
tice of one's own thoughts, feelings and actions. Although many have extolled the importance of introspection in learning, it is also essential for the instructional designer. As people interact, cultures interact. As designers who not only interact with other cultures but design for and with other cultures, we must consider our own thoughts, beliefs, attitudes, desires, and feelings toward these cultures. There should be mechanisms in place throughout the ISD process for introspection and conversation on these matters.

Henderson (1996) asserts "instructional design cannot and does not exist outside of a consideration of culture" (p. 86). The designer's world view cannot be divorced from his societal context; therefore, it becomes critically important that the designer becomes introspective in his approach when designing instruction. Henderson proposes a multiple cultural model of instructional design to address the limitations of other ID models. Henderson asserts that this model is extraordinarily culturally sensitive and that it is supported by the participation of the end user in the development phase.

We argue that introspection should not only be treated in the development phase, but injected seamlessly throughout the entire ID process. If our cultural biases are indeed omnipresent, what are they? How do our biases affect the products we create? For each stage of the ADDIE process, these and similar questions must be addressed.

CONCLUSION
As culture is at the heart of meaning making, it warrants exacting attention in the systemic design process. As Gustafson & Powell (1991) point out, too often models are not tested for validity and reliability. It is for this reason that we emphasize that research must critically evaluate this expanded ADDIE model.

As technology enables us to increase our interaction with the peoples of the world, we are enriched by the incessant shifts in our own cultural paradigms. A attention to this cultural dynamism and incessant interplay leads to both improved designs and improved designers. As instructional designers, we must be able to critically analyze our learner's cultures and allow it to strengthen the instructional design process. In this way we address our ethical commitment to creating culturally sensitive products.

REFERENCES
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