Educational Dialogue and Technological Utterances: A Phenomenological Approach to Developing a Theory of Evocative Design Practice

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Abstract

Online and distance education presents many challenges for both educators and system designers. The nature of these challenges is given particular clarity when examining online education in respect to pedagogical approaches which emphasize the importance of dialogue as part of the educational process. In order to begin to understand the dialogic role that technology plays in online education, a phenomenologically-oriented conceptual framework is sketched out. Taking computer interactions to be structured largely as interpretive processes that occur within a wider cultural context, the role of online educational systems in instructor-student dialogue is presented as a form of technological utterance, able to both sustain, as well as instantiate, messages in a dialogue between students and instructors. Introducing questions for future research, the aim is to develop design theory for both the design of online education as well as for design in general.

Keywords: cultural informatics, education, human-computer interaction

Introduction

Like countless other areas, education has felt the impact of the possibilities offered by the Internet and online communication. In many ways, the growth of online education presents a paradigmatic shift in educational practices and strategy (Harasim, 2000).

Such a move from a classroom-oriented paradigm to one which focuses on computer-mediated forms of communication highlights the role that dialogue and exchange plays in education. Particularly, in looking at online education, there is a constant concern for maintaining the value of such a dialogue and examining how it can be achieved in an online space (Beldarrain, 2006; Shea, Pelz, Fredericksen, & Pickett, 2002; Volery & Lord, 2000).

While dialogic modes of education have been considered to be key for student success for some time (Freire, 1997; Mitchell, 1999), the challenge of facilitating dialogue in online spaces presents new questions about the nature of such a dialogue, particularly regarding the ability of online tools to support the type of rich, cultural interaction that is necessary for successful dialogue (Young, 2008). Such questions permeate both the possibility for dialogue between instructors and students, as well as the dialogue that occurs between students themselves (Beldarrain, 2006; Shea et al., 2002; Volery & Lord, 2000).

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The question of dialogue in deign has been shown to bear more broadly to the relationship between designers and users in any endeavor, not just education (Buur & Bagger, 1999; Ulich, Rauterberg, Moll, Greutmann, & Strohm, 1991; Wright & McCarthy, 2010). As such, this paper intends to be a first step in laying out a mode of design thinking that is characterized by its dialogic nature, whether explicitly connected to education or not. Building from already established philosophical and theoretical approaches to design, the aim of this paper is to frame future research into online education design and to develop questions which may motivate future design research. While it takes its initial inspiration from pedagogical approaches emphasizing dialogue, the framing developed may be applied more broadly to any mode of design, whether there is an explicit aim for the facilitation of dialogue or not.

In this paper we will address the role that online educational tools and the design of learning materials can play in the building of dialogic communication between students and educators. We will examine the ways in which online tools themselves must be conceived of as an utterance within a dialogue. Looking first at the implications of a phenomenological understanding of computing in general, we will examine how the process of designing systems for online education may come to serve as an utterance to be interpreted in dialogue. Such “technological utterances” are seen to serve both the facilitation of a dialogic process and to provide tacit, cultural meanings that are themselves part of a dialogue between instructors and students. Finally, the transformative role that a process of translating traditional educational lessons into online materials will be discussed and future directions for research are identified.

Technology in the World

In coming to understand the modes of dialogue that online educational practices offer, it is important to address the ways in which such dialogic processes are supported by a wider background of cultural knowledge. In particular, given its oftentimes broad goals (Mitchell, 1999), education comes to most resemble culturally-based modes of computing which emphasizes the importance of the surrounding contextual and cultural milieu of computer use.

As a discipline, human-computer interaction (HCI) has moved steadily from an insular and Cartesian understanding of the relationship between users and systems toward an ever-more expansive view of a cultural and embodied user (Carroll, 1995; Dourish, 2004a; Suchman, 1987). Inspired in part by a phenomenological position developed by Martin Heidegger (2010), there has been an increasing conception of computer interaction as being something that takes place within a wider world, in terms of both a system's necessary function (Dreyfus, 1979, 2007; Winograd & Flores, 1987) and a user's interaction with a computer system (Chalmers, 2004; Dourish, 2004b). In this way, computers and users are both conceived of as inhabiting a shared world, with this sense of co-habitation being that which engenders both the possibility of use, as well as the contextual function of systems. Diverging from a simple technological rationalism, human-computer interactions come to be seen as being engendered by wide social and contextual factors, with research taking on a distinctly phenomenological character (Winograd & Flores, 1987). Information technology becomes not just a conduit passing messages from one place to another, but instead becomes entangled with such messages itself, both in its own function and in our use.

In addressing both the wider conception of the user and the increasing variety of factors that need to be addressed in the practice of computer use, researchers have increasingly pointed to not only the ability, but also the necessity of designing systems such that they are able to be engaged with as objects to be interpreted rather than simple tools to be used (Dourish, 2004b; Sengers & Gaver, 2006): application design comes to function as a culturally-embedded dialogue between designers and their users (Gaver, Boucher, Pennington, & Walker, 2004; McCarthy, Wright, & Cooke, 2004). For designers, and educational designers in particular (Young, 2008), it becomes necessary to be able to understand how systems can come to be known as such evocative things once they are set into the world at large. Understood phenomenologically, information technologies come to be seen not simply as a tool or a method of communication, but as something with its own being and status in the world. Online educational systems come to not only facilitate a dialogue between instructors and students, but also serve as messages themselves within a wider, already existent dialogue between learners and instructors. In functioning as a message, designed systems take on the form of a technological utterance which is able to support communication, while at the same time presenting a message of its own (however tacitly expressed). It is necessary to approach educational software not simply as a tool set that

is able to fit a specific set of requirements, but rather as something capable of being evocative, meaningful, and subject to interpretation.

Use, Education, and Dialogue

With computing coming to be understood as standing as one phenomena among others, embedded within a wider world of cultural intelligibility, it is necessary to look at the ways in which technologies can be understood to play a part in dialogue between designers and users, instructors and students.

While much previous theoretical work on the topic of dialogue has sought to make explicit the role of language in dialogue (Freire, 1997; Gadamer, 2004; Heidegger, 2010), as the interpretive possibilities of HCI have developed, it becomes necessary to look at the way in which technology itself becomes something to be interpreted as message, rather than just as a simple mediating tool between two signal-processing users. In computer-based interactions, the design of applications and systems comes to stand beside language as vehicle for the passing along of meaning, and is, in turn, subject to a cultural interpretation in the same way as language. Computing and the breadth of meanings that it takes on becomes seen to be subject to the possibilities of basic intelligibility as given over by the cultural background of such computing.

Applications and systems can be understood as technological utterances that, laden with meaning, need to be accounted for in a dialogic process between educators and students, and more generally, between designers and users. Online educational platforms and their associated learning materials are not simply a medium or channel through which instructors carry on linguistic dialogue with students, but are themselves part of instantiating that dialogue. As a simple example: the inclusion of a glossary of terms alongside other materials in an online course highlights to students the importance of a certain vocabulary in a course. In designing such educational systems, there is a need to understand that dialogue with students begins with the system itself, and not just the explicit linguistic messages that are passed through it. This may even go so far as to indicate that the mere fact of a course being offered in online form expresses to students something about the course.

Implications for Educational Design

Understanding these dual roles that online educational software can play, both as conduit and as message, there are two distinct challenges for instructional designers. First, as any system being used in the course of distance education is itself seen as figuring directly in the dialogue between students and instructors, questions regarding the way in which instructors translate their lessons into an online form are raised. Second, as both the design and subsequent use of a system engender a certain mode of interpretation, there is the question of how systems designed for online education may adequately support not only dialogue between instructors, but dialogue between students as well.

Translating from education to technology

The hermeneutic philosophy of Hans-Georg Gadamer (2004; p. 388-391) presents a framing of the question of translation that proves to be useful when confronting the question of translating from one context to another. In online education, there may be a translation from a real-world, classroom-based setting to one that is technological and online, or simply from the idea that an instructor has regarding a course to its online implementation. While the traditional aim of translation may be to reproduce the exact meaning of a text from its original language to another, such striving for exactness is never possible. For a translator, they are neither able to appreciate the full and exact historical and cultural context of a work and as such are themselves unable to understand the original meaning, nor are they necessarily able to appreciate the wider context of the new audience for whom the translation is being prepared. There is always an element of compromise.

For educators and designers, there is an analogous process as they move from either the pure idea of a lesson, or from an already established classroom-based lesson, to designing an online course. There is an inevitable shift in the meaning of any lesson as it passes through a process of translation to technical realization (Muller, 2004). Even in the case of simply conceiving of a lesson wholly within the space of online education faces this sort of challenge of translation. In attempting to formalize any type of

message into a technical system, there is the constant challenge of how to represent the intended meaning. While such a difficulty is faced in any form of pedagogy—online or not—the need to structure lessons into a formalized language suitable for online use adds further complication.

Opening Technological Utterances to Other Voices

While the process of translating learning objectives to formalized, technological systems is already fraught with challenges, additional complications are brought to bear as the situation of online learning is conceived of one that is best envisioned as a dialogue not only between learners and students, but also dialogue between students themselves (Beldarrain, 2006; Shea et al., 2002; Volery & Lord, 2000). With this consideration in mind, there is a need to not only translate lessons into formal, technological systems, but further, lessons need to be translated into systems which can then be appropriated, interpreted, and taken over by students in service of their own inter-student dialogues. That is, the initial utterance that is an online learning platform itself needs to be such that it can be re-made and re-factored into an utterance to be put forward by a student for other students.

Conclusion and Future Work

In understanding our interactions with technology in a phenomenological way, a fundamental tension in online education is revealed. Given strategies which are meant to engage students in dialogue with instructors and other students (Beldarrain, 2006; Shea et al., 2002; Volery & Lord, 2000), how is it possible to design online educational systems which are able to accommodate both instructor-driven dialogue and inter-student dialogue? The key, it seems, comes in understanding how the meaning of any technological system is something to be interpreted and is something that is reliant on a tacit background of cultural intelligibility. In this way, the various backgrounds of students and educators comes to function as a sort of fulcrum in any such exchange, in both the process of dialogue and the process of translation.

The development of this conceptual framework of design and dialogue points to three distinct challenges:

1. How is it possible through the design of online educational systems to bridge the gap of cultural intelligibility that separates instructors and a diverse and potentially unknown population of students?
2. How are lessons translated from an idea conceived by an instructor to a formalization of that idea in a technological system?
3. How can technological utterances initiated in the course of an instructor-student dialogue be re-figured and re-translated in order to function as part of an inter-student dialogue?

Even in the case of technologically mediated online and distance education, it is still possible to focus on process of dialogue and the co-creation of meaning between students and instructors. In many respects, while some channels of robust communication between students and instructors (such as face to face communication) may be in large part closed off in the course of distance learning, other new and different channels of dialogue are opened up. This paper has focused on the ways in which the technological tools and online distance learning platforms themselves need to be seen as taking part in the process of educational dialog as technological utterances, and how their creation and use can be productively conceptualized as a process of the translation of inner meaning toward material utterance and interpretation.

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