BARIERS TO COMMUNICATION IN DISTANCE EDUCATION

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ABSTRACT

To a large extent education can be thought of as a communication process among the participants. This article focuses on distance education, which has both the general communication processes that in-person education venues possess, and also communication specific to the technologies that mediate the teaching and learning taking place at a distance. There are various opportunities and barriers to effective communication. An exhaustive review of literature regarding communication barriers to distance education summarizes the technical, psychological, social, cultural, and contextual challenges leading to a significant conclusion: that as technology used for distance education improves so does both the opportunities to overcome many of the barriers to ineffective communication and the complexity of the barriers that are faced by the participants. The hierarchy of this structure is described.

Keywords: Distance education; communiation barriers.

BARRIERS TO COMMUNICATION IN DISTANCE EDUCATION

The literature is replete with discussion of the various barriers to distance education. These can be categorized several ways such as psychological, pedagogical, technical, social, cultural and so forth (Berge, 1998). Despite how they are categorized, to some degree most of these barriers overlap and merge together (Dabaj, 2011). Ineffective communication is at least a partial cause of most of these barriers to teaching and learning at a distance (Ozelkan & Galambosi, 2012). Communication obstacles can arise at all stages of the distance education process: in the design, development, delivery, or implementation of distance education courses. This paper focuses on communication barriers in the context of distance education.

HIERARCHY OF COMMUNICATION BARRIERS IN DISTANCE EDUCATION

Social media is changing the way we communicate. *Facebook, Skype, YouTube, Twitter* (among many others) and mobile devices are used in education and business in much the same way as they are used in our daily lives as important, preferred ways to communicate. As academic content moves to podcasts, videocasts, and blogs, and discussions are conducted using smart phones and social media of all types, certainly some communication among the participants becomes richer and some barriers to communication are significantly reduced. This is true within the distance education environment, too. As in the past, the future of distance education will be determined in large part by the innovations made in communication, and the ability educators have to overcome the communication barriers associated with language, culture, and different contexts with regard to the various communities of learners that exist.

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As communication moves through intrapersonal, interpersonal, small group, mass, intercultural and contextual venues, there is greater opportunity to resolve challenges; yet at the same time, there is more complexity in the need for overcoming a greater diversity of barriers. During an exhaustive literature review of communication barriers in distance education, I observed that as technologies improve, or expand in capabilities and scope throughout the world, there is also an increased set of complex barriers that emerge. With Internet-capable devices, communication methods have expanded and with that expansion, so has the opportunities for collaboration, access to resources, and context-aware problem solving (Donaldson, 2011).

The more communication rich the environment, the greater the potential is to overcome all types of communication barriers to distance education; yet in some ways, too, greater levels of communication anxiety arise (Feenberg, 1989). Paradoxically, as communication capabilities increase within the distance education environment, the more complex the communication barriers become. Said another way, if the communication method for a distance education course is broadcast television with no interaction among students, there is no opportunity for communication barriers involving cultural attitudes to arise in discussion among student participants.

Figure 1 illustrates the hierarchical nature of communication capabilities and the concomitant complex communication barriers within a distance education environment. For instance, at the base level, if there is no access (i.e., no communication possible at all), nothing else really matters as far as education is concerned until access is present. Once access is possible, there needs to be acceptance of distance education by students and teachers before meaningful educational experiences are possible. Likewise, as increased communication allows for collaborative activities within the distance education course, more complex communication barriers come into existence, too. This is true as one move up the pyramid through cultural issues and contextual issues. The more affordances allowed by the advances in technology, the greater the complexity is in the communication barriers discussed in the literature.
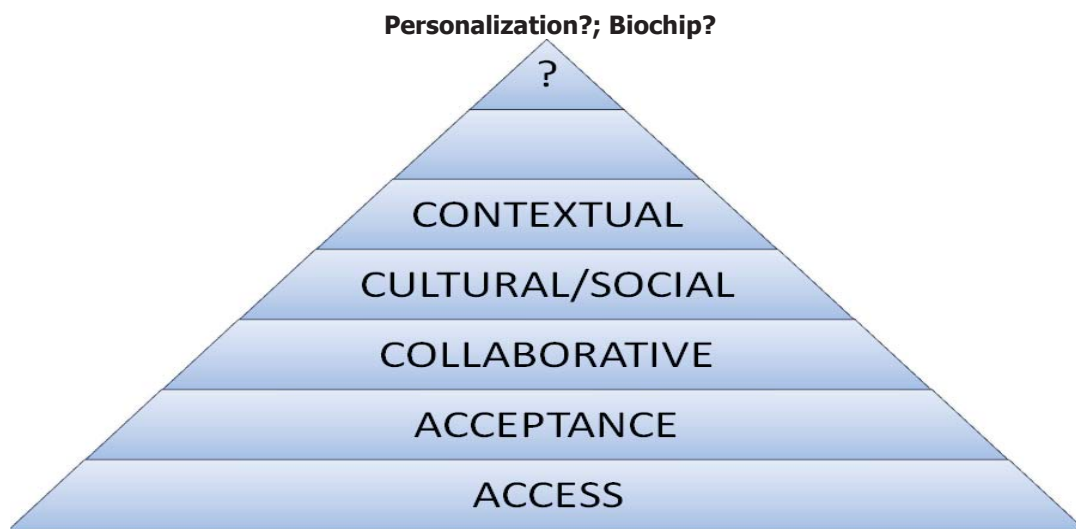
Personalization?; Biochip?

Figure: 1
Hierarchy of Communication Barriers in Distance Education

Note that the figure is not complete at the top, since advances in technology will continue. It is not clear what these affordances will be, nor what they will mean with regard to the complexity of communication challenges and how these will be addressed in the distance education arena.

PERSPECTIVE ON DISTANCE EDUCATION

Distance education is defined by Moore and Kearsley (2012) as "teaching and planned learning in which teaching normally occurs in a different place from learning, requiring communication through technologies as well as special institutional organization" (p. 2).

The difference between *distance education* and *distance learning* is important. *Distance education* is the responsibility of the sponsoring educational institution or organization and the instructor; *distance learning* is what students do, and therefore mainly the students' responsibility. These two concepts are often confused. *Education* and *learning* are not the same and it does not help that many authors use these expressions synonymously.

Add to this confusion the many terms that have emerged the past two decades such as *elearning, ubiquitous learning*, *blended learning*, *pervasive learning* and *mobile learning* that are really misnomers (most of the time when these terms are used, the speaker or author is talking about both learning *and teaching*); there is a significant conceptual problem. So, while some shifting of the use of terms such as *distance education, online learning,* and *mobile learning* is acknowledged in the sections that follow, it is done because I tried to follow the terminology used by the authors of the literature cited. Moving on, there are many ways to categorize and define barriers in distance education. For the purposes of this paper, the following are some of the important types of barriers and some characteristics of them that directly or indirectly affect communication:

> ➤ *cognitive distance* (or epistemological or conceptual understanding) refers to how homogeneous students are among themselves, or between a student and teacher, with respect to conceptual understanding. The more cognitive distance there is, the more difficult it is for concept development through discussion (Carr, Gardner, Odell, Mumsch, & Wilson, 2003, p. 12).
> ➤ *contextual distance* is defined here as the difference in learning or problem solving between the abstract situation presented to the student versus that found in an authentic situation.
> ➤ *cultural distance* (including differences in ethnicity, class, age, gender or religion). Persons have patterns of thought, action, and values that are distinctive and that characterize members of a social group (Winthrop, 1991, p. 50)
> ➤ *emotional distance* are personal feelings at the moment regarding the learning experience such as fear, mistrust, and suspicion.
> ➤ *language distance* is expressed in the use of second or third languages for teaching or learning, accent, and the use of dialect, slang, jargon, colloquialisms, acronyms and abbreviation
> ➤ *pedagogical distance* involves teachers and students managing transactional distance (Moore, 1993) during the educational experiences (Pereira, Lisbon, & Lõhmus, 2005)

➢ *physical distance* (i.e., geographical space)
➢ *psychological distance* referred to perceptions (subjective feelings) about the closeness or presence of another person when interacting with that person.
➢ social distance (degree of affinity, closeness, or support) refers to perceived differences in class and socio-economic status
➢ *technical distance* refers to differences in access to technology or technological capabilities across various people throughout the world. It may also refer to different individual competency with technology.
➢ *temporal distance* (i.e., time) The greater the grown of globalization in distance education, the more time zones that may and often are represented across the participants within a classroom (Isman, Canan, Isbulan, & Demir, 2008)

The difficulties that hinder effective communication may begin with technical issues, but as telecommunication systems improve, many other types of communication obstacles are added (Isman & Altinay, 2005).

The remainder of this paper discusses the hierarchy of communication barriers (breakdowns, challenges, drawbacks, impairments, impediments, obstacles, pitfalls, problems) as found in the distance education literature, emphasizing the past three decades.

IMPEDIMENTS TO DISTANCE EDUCATION OVER TIME

A concern for communication barriers can be found in the literature regarding distance education for as long as scholars have written about the field. This concern has been more prominent for the past quarter century.

Keegan (1986) stated that a critical link in communication in distance education was missing, caused by the geographic separation between students and teachers. Keegan believed it was a responsibility of the educational institution to compensate for the communication barriers in order to reduce student dropout and help students to integrate their academic and social experiences with their education. The discussion of communication barriers to distance education that follows is mainly topical, but at the same time it is chronological to a large degree, too.

This is no coincidence. One of the main points of this paper is to illustrate that as technology advances, the opportunities to overcome communication barriers improves, as does the naturally accompanying complexity and level of communication barriers that occur within the distance education system.

Physical, Technical, and Temporal Barriers
In the era of correspondence courses, the main challenges to distance education centered on lack of access to the instructor and lack of timely, two-way communication. Broadcast communication, with television or radio, helped to ameliorate the lack of access to instructors, but did nothing to increase two-way communication.

Eventually, some two-way communication problems occurring within correspondence courses were ameliorated by using telephone service (McMahon, Gardner, Gray, & Mulhern, 1999; Willis, 1996).

In general, problems that revolved around low levels of interaction led to a lack of motivation and the lack of enthusiasm for learning, often causing students to drop out of the distance education course or program (Isman, Dabaj, Altinay, & Altinay, 2003). Belchair and Cucek (2001) summed up part of their research saying:

> *Differences in student behavior were found depending upon the delivery method. Compared to others, students in internet courses were more likely to ask for clarification when they didn't understand something, apply what they had learned to the "real world," indicate they enjoyed the course and also tell the instructor when they had complaints. Thus, communication appeared to be the biggest issue, with internet students having greater access to communication than students in other delivery methods. Students also reported that the delivery of the course, particularly lack of interaction with other students and the instructor, was the greatest barrier to their success. Lack of time was the second greatest barrier, perhaps because so many of these students were both working and caring for families. Again, the lack of interaction was particularly acute for those in TV and AV courses, while time was a larger factor for those in internet courses. (p. 15)*

The Internet resolved many of the challenges experienced by students in correspondence and broadcast media based courses, albeit with the expected, large number of technical issues early on. The early days of the Internet saw a lot of frustration from participants due to such things as instability across the telecommunication systems, difficult user interfaces or navigational issues, and disjointed online communication (Rohleder, Bozalek, Carolissen, Leibowitz, & Swartz 2008), inability to access needed resources (O'Hanlon, 2001) and the existence of a user base with few online skills, combined with a lack of technical support.

Even as the Internet greatly reduced the issues in correspondence and broadcast delivery systems for distance education, some fear existed that the worldwide telecommunication network would be unable to accommodate the rapid expansion of the Internet (Galusha, 1997). Still, the ease of accessibility, fast communication among students and staff, and relative cost effectiveness of using the Internet for distance education outweighed the perceived and potential drawbacks (Hansen, Shinkle, & Dupin, 1999).

Psychological Barriers

Along with the access and technical problems with the delivery systems themselves, there were perceptual issues that were especially acute due to the initial lack of skilled online teachers and the background characteristics of students. Often students reported feeling confused, anxious or frustrated and wanted quicker feedback from the teacher regarding course content, assignments or management of the online class. Too frequently these feelings were met with an instructor who did not perceive the intensity of the students' sense of frustration, or did not adequately resolve the problems if they were perceived in the first place (Hara & King, 2000; Thorpe, 2002).The distance education literature speaks of the degradation in interactions between students and teachers and among students (compared to in-person classrooms), and even of abusive behavior (i.e., flaming) that could become a problem as the perceived anonymity of online interaction became more widespread (e.g., Galusha, 1997; Perreault, Waldman,

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Alexander, & Zhao, 2002). Much of the literature in the early 1990s was concerned with the ambiguity in interactions, and how resolution of those ambiguities was exacerbated when the primary communication medium is written text in asynchronous mode. This is especially the case when the communicators are not practiced in such communication. As Hara and King (2000) pointed out, "much of human communication is inherently ambiguous. But people can often adequately resolve key ambiguities when they are face to face" (p. 569). In many cases, distance education participants still believed they needed to observe the body language of the person they were communicating with, in order to understand and be understood.

Another significant communication challenge addressed in the distance education literature involves the feelings of isolation felt by students (Freedman, Tello, & Lewis 2003; Isman, Dabaj, Altinay, & Altinay, 2003; Sharma & Maleyeff 2003). It took many designers and instructors quite a while to understand how to reduce these feelings through areas in the distance classroom where all students and instructors could share their opinions, ask questions, and generally create the sense of belonging to a group. As students became more practiced in online learning and communication, and instructors learned ways to promote a sense of community within the distance education environment, feelings of isolation among many students began to diminish, being replaced by feelings of closeness and kinship (Dabaj, & Isman, 2004). Instructors and designers still need to focus attention on designing an online/distance learning environment for student engagement, and to promote communication strategies that support online students learning (Tinguely, 2010).

Social, Interaction, and Collaboration Barriers

The change from an in-person, classroom venue to online communication is perceived by many students and instructors as a significant loss (of dedicated uninterrupted learning space), and the differences in how social interactions occur online versus in-person is of great concern.

For instance, difficulties communicating with others in online classes can happened because of time zone variations, the absence of a sense of emotional connection with each other, or the lack of the kind of real-time feedback that happens in an in-person classroom (Kim, Liu, & Bonk, 2005, p. 340).

Still, many participants in online distance education find social interaction can be enhanced through technology-mediation. Rittschof and Griffin (2003b) reported "positive on-line social interaction characteristics can include;

- more interaction,
- more thoughtful interaction,
- greater honesty, (d) a sense of community,
- inclusion of everyone, and
- greater sharing" (pp: 288-289) if the online environment is created to facilitate and reward such interaction.

For most participants, in most cases, it is more difficult to create a similar sense of social presence and to avoid communication problems regarding social interactions online compared with doing so with the same participants in-person (So & Brush 2008), usually because technologically-mediated delivery systems do not allow the same amount of social-context cues (de Bruyn, 2004).

So, even though it may be challenging, any pedagogical or technological methods that can be used to facilitate the support needed to overcome communication barriers (Slagter van Tryon & Bishop, 2009), and to facilitate learners in establishing community, especially with online group work, becomes important to their success (Koh & Hill, 2009).

Cultural Barriers

As technologies used for distance education have advanced, often the participants' feelings of isolation and physical distance have decreased. At the same time, students from different locales and different cultures have increased, making communication and language barriers more of a problem (Bash, 2009; Betts, 2009; Hallberg & Wafula, 2010). Russell, Gregory, Care, and Hultin (2007) pointed out that, according to Vygotsky (1978) learning "focuses on the importance of culture and context in the formation of knowledge. In this paradigm, learning is a dynamic process mediated by language via social discourse" (p. 353). Learners define content and handle learning events differently depending upon such things as their beliefs, religion, ideas, local customs, and language (Ali, 2006, Sarrafzadeh, & Williamson, 2012). To most people collaboration, discussion, and communication generally becomes more difficult with persons perceived as strangers, or instructors from one culture teaching learners from a different culture (Shen, 2004).

Additionally, further cultural barriers are possible because of the environment known as cyberculture. Russell, Gregory, Care, and Hultin (2007) described cyberculture as "constantly evolving and rapidly mutating . . . characterized by an official language of English, hyperspecialized vocabulary, newbie snobbery, Anglo-American norms, and qualities of aggressiveness, competitiveness, as well as Western-style efficiency" (p. 353).

As online classrooms become more diverse, sometimes with courses being developed in one country or culture for delivery in another (Shen, 2004), so too do the language and other cultural barriers to effective communication. Many participants become concerned about miscommunication, being misinterpreted through their online posts, or inadvertently offending someone (Valaitis, Sword, Jones, & Hodges 2005).Communication on the Internet (the "Internet" is nothing but computers, routers, wires and other assorted technologies) is far from neutral or value-free. In fact, use of the Internet often highlights different cultures (Russell, Gregory, Care, & Hultin, 2007).

In diverse groups, language is probably the most recognizable cultural characteristic. Students express concern about lack of proficiency in English; for instance, fearing they will be misunderstood or misinterpreted, especially during collaborative work and discussion (Kim & Bonk, 2002). Yet, what learners of a second language need most are opportunities to actively use language as a communication tool (Borau, Ullrich, Feng, & Shen, 2009).One of the greatest divisions or contrasts involving cultural communication is Eastern versus Western.

Zaltsman (2009) summarizes this as, "Eastern communication is based on conflict avoidance, whereas Western is characterized by the ability to criticize or communicate the point of disagreement" (p. 325). In diverse online groups of learners, the instructor still takes a leading position. This is especially the case in conflict resolution and the facilitation of communication barriers caused by cultural division.

Contextual Barriers

Contextual issues affect problem solving in important ways. Increasing students' authentic problem-solving abilities has been, and will continue to be a critical goal for many instructional applications. While it is often important to simplify the contextual situation to reduce distractions and aid learning, this can lead to transfer problems when the situation becomes more authentic. Therefore, the "difference in context between the learning situation and the application situation can result to poor students' performance either because of their inability to efficiently recall and use relevant knowledge (lack of appropriate memory trails) or even because of lack of any knowledge at all which could be of use in the different application context" (Demetriadis, Papadopoulos, & Tsoukalas, 2005, p. 526). Performance support systems attempt to bridge this contextual distance when they provide immediate support for specific tasks in the workplace. Recently, mobile devices have exploded onto the scene for social networking, entertainment, but also for education and training.

> *Many see mobile technology as a means to extend the reach of distance learning. Mobile learning does not always seek to replace classroom learning . . . or laptops in distance learning. . . . Rather, mobile learning provides students with additional and unique learning support, flexibility of access, a broader channel of communication, and fewer temporal and spatial limitations. . . (Donaldson, 2011, p. 16)*

One of the characteristics of mobile learning is that learning is more contextual than ever before. Context-aware learning environments are mobile-based learning environments that use contextual resources such as global positioning system (GPS) (Brown & Metcalf, 2008) or Quick Response (QR) codes (Ramsden & Jordan, 2009).

A major goal of this paper has been to point out that along with increased affordances from technology come added and more complex challenges to the distance education learning environment. While most students find using their mobile devices a benefit for communication with classmates and faculty, a few would rather such communication be limited to faculty only, or even consider the lack of control regarding how, when and where communication occurs with instructors and classmates as a disadvantage. Students express "a desire to control and maintain a boundary between academic and personal life by limiting cell phone communication to things like texting" (Donaldson, 2011, p. 15).

IMPROVING COMMUNICATION IN DISTANCE EDUCATION

In some significant ways, communication in distance education is different from in-person, classroom-based communication. In the face-to-face classroom, there are multiple and instantaneous ways that communication between students and teacher, and among students can occur. In school or out, participants are practiced throughout their lifetime with in-person communication. There are several design elements that are critical to any course, and moreso in distance education courses where communication opportunities are limited, including:

➢ providing clear statements about the goals of the course and the purpose of online activities and assignments
➢ providing navigation assistance so students know where course activities and resources are located and calenders so students know when, where, and how assignments are to be submitted

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- ➢ **clearly linking content, activities, and assignments to assessment and the course goals**
- ➢ **using clear, concise, unambiguous language in assignments, syllabus and postings**
- ➢ **using communication channels that students prefer when possible, to reduce cultural and communication barriers**
- ➢ **provide summaries, additional resources, and feedbck to help students evaluate their learning**
- ➢ **provide guidance on suitable group processes and appropriate division of labor**
- ➢ **Design some elements of the online classroom that promote students gaining some familiarity with one another, and having the opportunity to build trust, especially before assignment groupwork or with multicultural groups (Berge, 2002; Kukulska-Hulme, 2005; Sarrafzadeh, & Williamson, 2012; Wang & Kang, 2006)**

For most students and teachers, anxiety levels are increased when they are involved in distance education, if for no other reason than the unfamiliarity of the delivery systems and changes in communication methods and patterns. It takes extra communication efforts, especially by the teacher, to reduce the students' concerns that they are missing important information, assignment due dates, or generally misunderstanding expectations of the course. Additionally, 24/7 technical support is critical to distance education operations.

Many times, what is needed are ways for students to contact the instructor and to receive a response in a timely manner. or opportunities for discussion or collaboration among participants that increases clarification and common understanding (Koh, Barbour, & Hill, 2010; Perreault, Waldman, Alexander, & Zhao, 2002; Rittschof & Griffin 2003a). In more diverse classroom, it may take additional efforts (King, Taylor, Satzinger, Carbonaro, & Greidanus, 2008) to minimize communication anxiety:

> *. . . making students aware of and comfortable with patterns, learning about students' backgrounds and experiences, being sensitive to different communication styles and varying cultures are the options of enhancing [the] distance education system by eliminating communicational barriers.*
> *In addition to this, remembering that students must take an active role in distance education, assisting students in becoming familiar and comfortable with delivery, preparing students to resolve the technical problems, being aware of students' needs and using effective interactions and feedback strategies, integrating variety of delivery system for interaction and feedback, contacting each side, making detailed comments and developing strategies for students reinforcement, reviews, repetition and personalizing instructor involvement are the statements to enhance the quality of distance education on behalf of eliminating any kind of barriers. (Isman, Dabaj, Altinay, & Altinay, 2003, pp. 13-14)*

The relationships among participants are critical for successful online discussion and collaboration (Anderson, 2006). At the same time, as with any educational setting whether online or in-person, each student has his or her own background, culture, and characteristics that affects their behavior and perceptions during the learning process (Rye & Støkken, 2012).

The instructor and designers of online education can do all they can to design courses to remove as many potential cultural and communication barriers (Liu, Liu, Lee, & Magiuka, 2010, p. 177), but ultimately students will need to realize they too need to take responsibility for multicultural content and classmates so they can work on reducing barriers to their own full participation and performance.

CONCLUSIONS

From a communication perspective, simultaneously distance education offers many affordances and challenges. Paradoxically as technologies used for distance delivery of education becomes easier, cheaper, globalized and more user-friendly, the more the challenges faced by the participants increase in complexity. These obstacles to education at a distance affect both actual communication and also disrupt how participants perform and feel about their learning experience (Jones, 2010).As summarized above, there is a hierarchy to the communication impediments in distance education that have been categorized as technical, psychological, social, cultural, and contextual in nature. Without a doubt, these challenges often overlap one another, and the list promises to grow. Still, researching and diagnosing communication barriers (Kurubacak, 2007) can lead to significant clues to how to design and implement courses that reduce potential communication problems.

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