Design preferences for and attitudes concerning e-learning in a global organization

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ABSTRACT

Design preferences for and attitudes concerning e-learning in a global organization

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Online educators are being faced with increasingly heterogeneous student populations. Researchers and practitioners are concerned that learners studying in a culture other than their own may be at an unnecessary disadvantage for a variety of reasons including but not limited to: difficulties in studying in a second or foreign language, different communication styles, coming from a another tradition of academic discourse, and differing expectations of student and teacher roles. However, the literature to date has been mostly descriptive and anecdotal. Of note, there is a lack of larger sample-size studies with sufficient power and control of extraneous variables, to identify the effects of cultural dimensions.

This study investigates: the characteristics of the particular challenges that global learners encounter in an online setting; the ways that cultural and linguistic differences manifest themselves as difficulties and opportunities in global online learning environments and the usefulness of current theories regarding the influence of culturally related factors in online learning. A large scale cross-sectional survey was conducted with participants from a large multinational non-governmental agency.

This study will help close the gap in the research literature. Specifically it attempts to confirm, clarify and extend our current understanding of the differential appeal of three e-learning designs (e-training, problem-based learning, and virtual classroom) to adult professional in-service learners related to their diverse national and disciplinary cultural backgrounds. This

study also includes other variables that might be more significant than, or might mediate the effects of cultural effects. Furthermore, the survey sheds some light on which theoretical cultural characteristics/dimensions seem to account for such observed differential perceptions of the three modes of e-learning.

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Table of Contents

List of Figures

List of Tables

Chapter 1

Introduction

At an unprecedented rate, online educators are being faced with increasingly

heterogeneous student populations. Contact between cultural groups has been increasing

because of; new technology and information systems, the rapid increase in and redistribution of

the world's population, and the rapid movement towards a global economy (Samovar, Porter &

McDaniel, 2007).

In 2009, the Horizon Board (Johnson, Levine & Smith, 2009) listed globalization as the

top trend affecting the practice of teaching, learning, research and creativity. The growing

emphasis on lifelong learning, the change to knowledge-based economies, and specialization

within many professions has led to the demand for targeted education and training from a widely

dispersed and diverse body of learners (Parrish & Linder-VanBerschot, 2010). The use of

Information and Communication Technologies (ICTs) to deliver tertiary education courses and

training programs is increasing, and there are a growing number of learners who are participating

in e-learning courses designed and delivered by members of a cultural group other than their

own. As education and training programs are delivered into other countries, a number of social

and cultural issues arise, such as working in another language and conflict between teaching and

learning cultures (Bates, 2001; Gunawardena & McIssac, 2004; Moore, Shattuck & Al-Harthi,

2006; Murphy, Gazi & Cifuentes, 2007).

For instance, in an eleven country internal evaluation of the 280-hour Cisco Networking

Academy program, Selinger (2004) found differences in the way the local instructors

implemented the web-based program. The differences in pedagogy in each country were demonstrated in the way that students were treated, how instructors perceived their role and how instructors perceived students. Selinger (2004) stressed that "cultural adaption to global education courses is important in enhancing students' learning experiences" (p. 238).

In short, problems related to online intercultural learning in higher education focus primarily on two interrelated issues: (a) immediate difficulties in online learning, which frequently requires new ways of interacting and collaborating with others; and (b) complex uncertainties arising in intercultural learning, which may include those arising from learners and instructors with differing worldviews, communication practices, and technological issues (Kember, 2007; Murphy, Gazi & Cifuentes, 2007).

The growth in global learning has led to a greater awareness of the role and impact of culture in online learning (Gaskell, 2006; Gunawardena & McIssac, 2004; Mason, 2003; Moore, Shattuck & Al-Harthi, 2006; Wang & Reeves, 2007). Researchers and practitioners are concerned that distance students studying in a culture other than their own may be at an unnecessary disadvantage for a variety of reasons including but not limited to: difficulties in studying in a second or foreign language, different communication styles, coming from another tradition of academic discourse, and differing expectations of student and teacher roles (Bates, 2001; Chase, Macfadyen, Reeder & Roche, 2002; Collis, 1999; Collis & Remmers, 1997; Goodfellow, Lea, Gonzalez & Mason, 2001; Gunawardena & LaPointe, 2007; Gunawardena, Wilson & Nolla, 2003; Mason, 2002, 2003, 2007; McLoughlin, 1999, 2001, 2007; Moore, Shattuck & Al-Harthi, 2006; Palloff & Pratt, 2001; Smith & Smith, 2000). Learners too, have expressed experiencing frustration and confusion with unfamiliar educational practices and implicit assumptions regarding teaching and learning.

However, despite the growing awareness of the challenges experienced by learners studying in a culture other than their own, and the need for research in this area, much of the literature to date tends to be descriptive and anecdotal. Many studies provided guidelines for practice, but they are based on experience and intuition as opposed to research (Gunawardena et al., 2003). Finally, the results of the few research studies have not been conclusive due to a number of factors such as, for example, poor research design, small sample size, and sampling limitations (Conole, 2004).

This study fills a gap in the research literature by examining the challenges faced by a diverse group of adults working in a multinational non-governmental office (NGO) through a large scale survey. The NGO employs approximately 6,000 international and national staff located across 126 counties and dispersed in regional offices, branch offices, sub-offices and field offices. The Learning Solutions Office of the NGO assisted in collecting data from the respondents by hosting the online survey and contacting the staff. Thus, by having a larger scale survey taken within one organization, an important variable, that of organizational culture, is held constant.

The thesis outlines the purpose of the study, presents a review of the relevant literature, describes the research methods, outlines the research findings and finally presents the conclusions derived from the study.

Conceptual framework

The topic of global e-learning is relatively new, and thus the theoretical base underpinning the research is composed of several strands, as researchers endeavour to frame this complicated area of teaching and learning. Studies in diversity in the traditional face to face

classroom, educational traditions, distance education, gender differences in the use of Information and Communication Technologies (ICT), and cross-cultural communication theories have contributed to studies examining the challenges of learning online in a culturally diverse setting.

Theoretical framework. In a review of research that focused on questions of culture in distance learning, Uzuner (2009) sets the scene by referring to discussions regarding the cultural hegemony that exists in traditional classrooms. She notes the contribution of various theorists who advocate the incorporation of multiple cultures into the school curricula. Indeed, the issue of diversity in the classroom have received considerable attention, especially in countries with diverse populations, and provides a good starting point for examining the cultural challenges experienced by global learners. Take for example, a longitudinal study by Cortazzi and Jin (1997) that was carried out by means of interviews, surveys, filmed class observations, and student work. The purpose of the research was to investigate the perceptions of a group of Chinese students and their British instructors regarding the instructional environment at a British university. Cortazzi and Jin (1997) showed that in a society that is heavily influenced by Confucian philosophy, factual knowledge is considered central to learning and the teacher is viewed as possessing this knowledge. The authors (Cortazzi & Jin, 1997) note that not every Chinese student will necessarily adhere to this knowledge-acquisition centred culture of learning; nevertheless they will recognize its influence.

Moore, Shattuck, and Al-Harthi (2006) point out that, "culture can also be understood as a system of socially and historically created traditions that includes educational and pedagogical traditions" (p. 1). There are, thus, cultural differences in the approach to teaching (Bates, 2001). "Culture is inseparably linked to education; people raised in diverse cultures are educated in

accordance with perceived needs of their cultures" .This is why it is often difficult to export educational systems and policies to other countries that do not share the same values and standards (Hall, 1990).

The significant role that culture plays in learning had been noted by educators such as Bruner (1966; 1996) and Vygotsky (1978). For example, Bruner (1996) states, "How one conceives of education, we have finally come to recognize, is a function of how one conceives of culture and its aims, professed and otherwise" (ix-x). Similarly, Vygotsky (1978) asserts that the "mechanism of individual developmental change is rooted in society and culture". Because Vygotsky viewed learning as a profoundly social process, he emphasized dialogue and the varied roles that language plays in instruction and in mediated cognitive growth. Thus, learners need more than oral lectures: they also need adult guidance and/or peer collaboration.

Other researchers, such as Brown, Collins and Duguid (1989) and Lave and Wenger (1991), continued to stress the importance of context, and hence culture, in learning and gradually there has been increasing acceptance in the educational community of new paradigms for learning. In short, Kearsley (2002) calls the emphasis on the social/cultural elements of learning an important development that has shaped learning theory and instructional applications.

However, as Mason (2007) notes, "While cultural differences are not unique to global courses or even to online courses, they are much more evident and more difficult to address without the benefit of face-to-face interaction" (p. 586).

For example, gender differences have been observed in both the traditional face to face classroom, and in the online environment. In their review of post 1990 studies, Prinsen, Volman and Terwel (2007) concluded that most studies found that males tended to dominate in the

computer-mediated communication (CMC), although the results were not unequivocal. Even though males tend to dominate in the CMC environment, in general female students prefer CMC discussion to face-to-face discussion. However, one study found gender interacted with ethnicity. White female students participation in computer-mediated discussion generally increased compared to their participation in traditional face-to-face classroom discussion, but this increase did not occur with the Hispanic female students. They reported feeling ignored in the computer-mediated setting and were uncomfortable with the lack of non-verbal cues. This review (Prinsen et al., 2007) also pointed to gender differences with communication styles in computer-mediated communication. Male students were typically more assertive, and more likely to disagree in their posts. Female students were more attuned to the task and to collaboration, built more on earlier messages and agreed more with males than males with each other (Prinsen et al., 2007). Studies of gender differences in CMC also contribute to the body of knowledge and are an important aspect of cultural differences in global e-learning.

Finally, as the role of culture in the online environment has to date received little attention (Moore, Shattuck & Al-Harthi, 2006) some researchers and practitioners have turned to the field of cross-cultural communication to inform practice. Research in cross-cultural communication studies, such as Hall's (1976) theory of high and low context culture and Hofstede's (1980, 2001) theory of national cultural dimensions, began to provide theoretical frameworks for studies of online learning behaviour.

Historical background

The growth of borderless education has led to an increasing awareness of the role and impact of culture in learning (Gaskell, 2006; Gunawardena & McIssac, 2004; Mason, 2003;

Moore, Shattuck & Al-Harthi, 2006; Wang & Reeves, 2007). Indeed, a special journal issue of the *British Journal of Educational Technology* in 1999 was one of the earliest attempts to address the educational impact of new technologies on culture, and the two-way interaction between cultural diversity and learning in distributed networks. The use of the Web to deliver instruction was growing, but there was little research to target cultural issues in instructional design for distributed and interactive learning systems. There was a wide range of issues highlighted in this special issue as the main goal was to point out the various directions in which the research needed to move (Wild, 1999). Although many of the articles were case studies or theoretical discussions, they are still frequently cited in the current research literature.

For example, Collis (1999) noted that Web-based course support sites were becoming more widely used in Higher Education. However, the acceptance, use and impact of computer technology are influenced by culture-related aspects at the learners' social, personal, organizational, and professional or discipline-based level. Based on research and years of experience, she identified factors that are sensitive to culture-related differences in terms of the acceptance, use and impact of computer-related resources. These factors include more obvious aspects such as subject-area disciplines and language, as well as items that had received less attention at that date, such as western based assumptions when designing group-support systems, appropriateness of communication patterns between instructors and students, differences in expectations for technical support and so on.

Two years after the *British Journal of Educational Technology* published their special issue on culture and learning in distributed networks, *Distance Education* published a Special Issue dedicated to addressing the challenges of online teaching with culturally diverse student groups. Similar to the *British Journal of Educational Technology's* special issue 30(3), many of

these articles are still cited in the current research literature. The guest editors (Mason & Gunawardena, 2001) of *Distance Education's* special issue also hoped to generate interest that would lead to further research. However, with the increase in experience and awareness of the issues involved with global learning, they were able to divide this issue into three themes: theoretical studies, research studies and descriptive studies.

The three theoretical studies included McLoughlin's (2001), integration of Biggs' (1999) cross-cultural teaching ladder and Wiggins' (1998) educative assessment ideas into a constructive alignment of teaching, assessment and curriculum design framework. Pincas (2001) writing from a language teaching background highlighted the complexities arising from differences in pedagogical and linguistic cultures in a global educational environment. Non-participation in computer-mediated communication activities and evaluation issues are significant, and often hidden, problems for students who do not have English as their first language. Finally, in the third study, Wilson (2001) labels cultural distance as the third displacement in distance education. The other two displacements being time and place. He describes *cultural discontinuities,* mismatches between the conditions of learning and a learner's socio-cultural experiences, as obstacles in cross-cultural educational interfaces.

Statement of the problem

The growth in distance education has led to a greater awareness of the role and impact of culture in online learning (Gaskell, 2006; Gunawardena & McIssac, 2004; Mason, 2003, 2007; Moore, Shattuck & Al-Harthi, 2006; Wang & Reeves, 2007) and there has been an increase in research of this topic. Nevertheless, there are few studies in course design that are generalizable to global learning situations (Gunawardena & McIssac, 2004).

In the late 1990's, the use of the Internet, and in particular the use of the Web, to deliver instruction was growing, but there was little research to target cultural issues in instructional design for distributed and interactive learning systems. In 1997, Branch called for instructional design that is culturally sensitive. Other researchers and practitioners, who were drawing attention to the issues in global online learning, argued that the first step in the process of becoming more culturally competent is recognizing that instructional design is not culturally neutral (Collis, 1999; McLoughlin, 1999; Wild, 1999). In her seminal work, Henderson (1996) contended that there are cultural influences operating on the authors and instructional designers of online learning materials, such as the instructional designer's world view, the designer's values, ideologies, culture, class and gender, and the designer's commitment to a particular design paradigm, and similarly, influences that have an impact on the interpretation of such materials by learners (Wild & Henderson, 1997). In 1996, Henderson called for instructional designers to become more aware of the role of culture.

A few of them have taken up the challenge. Currently, there are in fact, some instructional design models based on pedagogical models extended by cultural dimensions, such as: Edmundson's (2007) Cultural Adaptation Process (CAP) model; Gunawardena, Wilson, and Nolla's (2003) Adaptive, Meaningful, Organic, Environmental-Based Architecture (AMOEBA) design framework; Henderson's (2007) Multiple cultures instructional design model for e-learning and e-teaching; McLoughlin's (2001) framework for culturally inclusive pedagogy; and Young's (2007) Culture Based Model. In addition, an argument has also been made that the traditional ADDIE model can take the cultural dimension into account (Powell, 1997; Thomas, Mitchell & Joseph, 2002). However, these approaches require detailed knowledge of the

educational characteristics of the targeted culture. This is not always the case, nor is it practical, for training a multinational, globally dispersed workforce.

Another avenue for planning and accounting for cultural differences has been through theoretical models of national culture, such as Hall's (1976, 1990) high and low context cultures, and Hofstede's (1980, 2001) theory of cultural dimensions. There are criticisms of this work, such as definition problems, methodological simplicity, and instrument equivalence. Furthermore, this research applies to differences between national cultures; however, individuals are also subject to other influences. There is considerable variety among individuals in a country, and considerable overlap in responses of individuals from different countries; thus care should always be taken not to stereotype individuals. In addition, these theoretical studies lack data from important regions of the world. For example, Hofstede's work does not include the former Eastern European block, or many of the African countries.

However, aside from the criticisms applying to research into cultural dimensions, as with the culturally sensitive instructional design models, it is difficult to make use of these theories when the characteristics of the target group are unknown. Furthermore, there is some disagreement over which of the cultural dimensions are the most important, and under which circumstances (Parrish & Linder-VanBerschot, 2010).

In fact, despite the rising awareness of a need for it, there apparently is little good research that "systematically analyzes culture-related variables to suggest design guidelines for culture-related, flexible, online learning environments" (Seufert, 2002, p. 412) and most practitioners are operating in a research vacuum (Mason, 2003).

Yang, Wang and Drewry (2009) note that there is a, "lack of theoretically grounded work examining the relationship between cultural factors and training process" even in face to face training (p. 331). In addition, the existing research regarding the association between culture and training is for the most part focused only on a particular region, uses a few single case studies, or examines only one or a few dimension of culture at a time. Training a globally dispersed workforce through technology adds another level of complexity. The issue of cultural influences on instructional systems is becoming a more important challenge faced by developers of e-learning products. Much of the rationale for e-learning rests on its ability to provide effective learning experiences, cost-effectively, to large, widely-distributed audiences.

The lack of research-based studies concerning the cultural aspects of online learning and teaching can be partly explained by the difficulty in identifying appropriate methodologies and a lack of adequate resources for this type of research (Wang and Reeves, 2007). Furthermore, finding equivalent samples for comparison in quantitative studies has also been a challenge (Gunawardena et al. 2003, p. 771).

However, workplace e-learning is the most rapidly growing type of domestic and international distance education, and the global workforce is becoming more diverse (Remtulla, 2010). Regardless of the difficulties in conducting research into the cultural challenges encountered by global learners, there is a need for larger scale research studies that address the realities experienced by a multinational workforce.

Purpose of the study

This study extends our current understanding of the differential appeal of three typical e-learning designs (e-training, problem-based learning, and virtual classroom) to adult professional

in-service learners related to their diverse national and disciplinary cultural backgrounds. It also includes other variables that might be more significant than, or might mediate the effects of, culture. This research study asked the following questions:

1. What are the characteristics of the particular challenges that global learners encounter in an online setting?

2. What are some of the ways that cultural and linguistic differences manifest themselves as difficulties and opportunities in global online learning environments?

3. Do current theories regarding the influence of culturally related factors in online learning cast light on research results?

Expected Contribution

A growing body of literature explores issues in global e-learning. Many papers promote certain philosophies, general models or specific procedures, which of course have their place, especially in a field that is relatively new in terms of its global outreach. In addition, there have been many small qualitative studies that explore specific issues. There is currently, however, insufficient convergence of data from research on factors that influence learning in global e-learning to confirm which are the most relevant. Of note, there is also a dearth of larger sample-size studies with sufficient power and control of extraneous variables, to isolate and identify the effects of cultural dimensions. Few of the reviewed studies address other variables that might be more significant than, or might mediate, the effects of cultural aspects. Such variables include, prominently, prior experience with e-learning, position held within the organization, and discipline with respect to education. The study proposed here will include data concerning these variables, from a large group of respondents who all work for the same international agency.

This study will help close the gap in the research literature. Specifically it will attempt to confirm, clarify and extend our current understanding of the differential appeal of three e-learning designs (e-training, problem-based learning, and virtual classroom) to adult professional in-service learners related to their diverse national and disciplinary cultural backgrounds. Furthermore, the survey may shed light on which theoretical cultural characteristics/dimensions seem to account for such observed differential attractiveness/repulsiveness of the three modes of e-learning.

Summary

There are a growing number of learners who are participating in e-learning courses designed and delivered by members of a cultural group other than their own. There is some evidence to suggest that these learners are at an unnecessary disadvantage. Research, however, has tended to be descriptive and anecdotal and often focuses on only one geographical region or nationality. Although culture has begun to be addressed in instructional system design, it is still too often overlooked, or undervalued (Henderson, 1996; Rogers, Graham & Mayes, 2007; Thomas, Mitchell & Joseph, 2002). Furthermore, there is little guidance for situations where the characteristics of the culturally diverse workforce are unknown. Some studies have used theoretical cultural dimensions as a framework, but the relationship between cultural dimensions and design principles is not clear (Wang & Reeves, 2007).

This research dissertation has been organised into five chapters. Chapter 2 will describe the research literature and provide a background to the study. Chapter 3 outlines the research design and methodology, including the rationale for the research design. Chapter 4 outlines the

research findings, grouped by research questions. Chapter 5 draws some conclusions, and makes

suggestions for further work.

Chapter 2

Review of the Literature

Chapter 1 provided an overview of the demand for targeted education and training from a widely dispersed and diverse body of learners. There are, thus, a growing number of learners who are participating in e-learning courses designed and delivered by members of a cultural group other than their own. However, as education and training programs are delivered into other countries, a number of social and cultural issues arise, such as working in another language and conflict between teaching and learning cultures.

To date, much of the research literature has been descriptive and anecdotal, or comprised of single case studies. In particular, there is a lack of larger sample-size studies with sufficient power and control of extraneous variables to identify the effects of cultural dimensions. This study fills a gap in the research literature by examining the e-learning challenges faced by a diverse group of adults working for an international non-governmental office (NGO) who are scattered across the globe, and employed in widely varying capacities.

Two research literatures are relevant to this study. Thus, the first section of the review explores theory and research related to culture and learning. The second part is an examination of instructional design theories that are relevant to global e-learning.

Both e-learning and culture have multiple definitions in the literature. Thus, this chapter first presents definitions of e-learning and culture in the context of the study of global e-learning. As global e-learning is a relatively new field, this literature review presents research from the

fields of diversity, second language learning, the educational traditions of American distance education, and subject discipline cultures as they relate to components of this study. Theories of social presence and cross-cultural communication are often used to provide the theoretical underpinning, or explanations for studies linking the cultural aspects of global e-learning, and thus are also included in this review. Finally, the chapter concludes with an analysis of the limitations and gaps in the current research literature, and the expected contribution to the literature provided by this study.

Definitions of e-learning

Every field tends to develop its own unique language replete with jargon and acronyms. In addition, in a rapidly developing field, such as e-learning, the meaning of terms can quickly evolve over time and new terms are created due to changes in use, emphasis or meaning (Australian Flexible Learning Network, 2004). The many definitions reflect, to a certain extent, the diversity of practice and associated technologies. Ally (2008) reports that terms commonly used for online learning include e-learning, Internet learning, distributed learning, networked learning, tele-learning, virtual learning, computer-assisted learning, Web-based learning, and distance learning. Nevertheless, the term e-learning now seems to encompass a broader concept than online learning (Australian Flexible Learning Network, 2004; Naidu, 2006).

For example, the Australian Flexible Learning Framework (2008) describes six types of e-learning, which are as follows: e-training, blended learning, virtual classroom, digital campus, distance education, and Web in class. As seen in the following excerpt from their delineation, in terms of workplace learning, e-training, blended learning, and virtual classroom would be of the most interest. See Table 1 for more details regarding these three typical types of e-learning.

Table 1

Comparison of three types of e-learning

E-learning type	E-training	Blended learning	Virtual classroom
Description	Intranet (in-house) for workforce development	Flexible delivery to enrolled or workplace clients	Live distance delivery
Learning mode	Self-paced, individual and self-assessed	Highly facilitated group learning	Train/presenter led team learning
Delivery	LMS	LMS, ICT, workplace, some face-to face	Web conferencing

In short, "e-learning is commonly referred to the intentional use of networked information and communications technology in teaching and learning" (Naidu, 2006, p. 1). For the purpose of this study, the terms e-learning and online learning will be used interchangeably.

A working definition of 'culture' for this study

It is important to clarify the concept of culture to better situate it in the context of an online multicultural teaching and learning environment. Nonetheless, this is not an easy task. As a case in point, in 1952, the American anthropologists Kroeber and Kluckhohn (1952) listed 164 definitions of culture. As Chase, Macfadyen, Reeder and Roche (2002) point out, the term

'culture' has multiple meanings in different contexts. Definitions of the concept of culture range from reflecting an anthropological viewpoint, to sociological and educational perspectives (Bate, 1994).

For example, in one of the earliest articles to deal with culture and instructional design, Branch (1997) defines culture as, "the epistemology, philosophy, observed traditions, and patterns of action by individuals and human groups. Cultural groups develop rules for interacting as a way to negotiate physical environments, explore religious beliefs, and achieve socially constructed desires" (p.38). Matsumoto (1996) described culture as "the set of attitudes, values, beliefs, and behaviours shared by a group of people, but different for each individual, communicated from one generation to the next" (p. 16) highlighting that there is a difference between group cultural and individual culture. Finally, Samovar, Porter and McDaniel (2007) describe the characteristics of any culture as: learned, shared and transmitted from generation to generation, based on symbols, dynamic, and an integrated system. They note that there are five constituents found in every culture: history, religion, values, social organizations and language.

While there are numerous definitions of culture, they all refer to four fundamental properties of culture. It is "holistic" because it encompasses all the elements characterizing the life of a group. It is "shared because individuals in a social group adhere to a set of values and standards in response to the problems posed by their environment. It is "transmittable" from one generation to the next to ensure continuity of the culture through time. Finally, culture is "evolving" rather than static, enabling it to adapt to the surrounding world (Germain-Rutherford & Kerr, 2008).

One of the difficulties in dealing with the concept of culture arises from the fact that we are simultaneously members of multiple cultural groups or, as Pincas (2001) puts it, people are members of many communities. For example, in a study of 220 Chinese and 245 British university students, researchers found significant differences in internet experiences, attitudes, usage and self-confidence between the groups, but significant gender differences were also found in both national groups (Li & Kirkup, 2007).

In fact, "cultures are not mutually exclusive, but overlap, contain and are contained by other cultures and constantly feed on outside influences" (Pincas, 2001). Cultural adaptation, or acculturation, encompasses the many changes that take place when people from different cultures come into contact with each other. For instance, despite having a common ethnic Chinese heritage, one study found significant differences in their approach to studying among Malaysian-Chinese, Hong Kong Chinese and Singaporean-Chinese students studying in Australia when they were examined using Entwistle and Ramsden's Approaches to Studying Inventory (Smith, 2000). The authors attributed this difference to national differences in Hofstede's (1986) power distance index. However, they, too, found significant country by gender interactions.

Finally, not only do nationalities and ethnic groups have cultures, but communities and organizations do also (Rogers & Steinfatt, 1999). Furthermore, as Gunawardena, Wilson and Nolla (2003) note, "individuals belong to more than one culture, some voluntarily and some involuntary" (p. 753). Thus, many researchers are recommending that further studies include multi-level cultural contexts including national, ethnic, organizational, group and individual level variables (Lim, 2004).

Language and culture

Language is inextricably bound to culture and is an important component of cultural identification (Rogers & Steinfatt, 1999). However, the concepts of linguistic knowledge, communicative competence, communication styles and preferences, identity, and cultural competence are often intertwined in a complicated web that make them difficult to deconstruct for research purposes.

In the area of borderless education, especially for global e-learning, the issue of English as a second or foreign language adds a level of complexity for instructors and for learners. The dominant position of English as the global language has been reinforced by the growth of the Internet (Evans & Nation, 2007) and currently, English is also the dominant medium of global instruction (Henderson, 2007; Pincas, 2001). Thus, we have learners from different language backgrounds interacting in a language that is their second language or even third.

Prior approaches to English language learning do not always help students when they are in an English academic situation (Ramburuth & Tani, 2009). For example, rhetorical conventions, which relate to notions of relevance, are often a source of cross-cultural difficulty for students working across languages (Pincas, 2001). Aside from the obvious difficulties of studying in another language, other issues also arise, such as typing on an English keyboard, as most online programs and Learning Management Systems are in English only.

Finally, although acknowledging that more research is needed, Bates (2001) has also pointed out that in his experience with managing online programmes, "there appears to be major differences between ethnic groups in their willingness to participate in online forums, and these differences seem to be independent of skill in conversing in a foreign language" (p. 129). This

example is typical of the sentiment expressed by many practitioners working with diverse groups of learners. There is a complex relationship between language and culture, and it is difficult to separate the two.

Differing educational traditions

Culture is also inseparably linked to education. "People raised in diverse cultures are educated in accordance with perceived needs of their cultures" (Samovar et al., 2007, p. 256). As Moore (2006) himself points out, he and Charles Wedemeyer were influenced by the teaching and learning ideas of James, Dewey, Rogers, and Knowles when they were developing the philosophical underpinnings of the American tradition of distance education. James' pragmatism, Dewey's ideas on experiential learning and reflective thinking, Rogers' emphasis on personal responsibility and freedom to choose, and Knowles' model of the teacher as a facilitator led to an American tradition with a focus on the individual, the importance of interaction and interactivity, and an understanding of the importance of a systems approach to distance education. Anne Hewling (2008), of the Open University UK, argues that the majority of online learning systems are still based on North American and European educational practices.

While there is some difficulty with terminology, such as reducing numerous cultures to simply Western or non-Western, or using Western as a synonym for American, some authors have contrasted approaches to education based on different philosophical traditions. For example, the secondary and post –secondary systems of North America can be characterized by flexibility in the choice of courses, a preference for active and reflective pedagogies, and collaborative learning strategies. In contrast, the secondary and post-secondary systems of Asia favour more centralized programs and educational policies and a strong Confucian influence,

with fairly structured learning, a preponderance of lecture courses and the valuing of competition in learning (Liu, 2007; Dunn & Marinetti, 2007).

Qi and Boyle (2010) give a very practical example of how national or institutional educational practices and policies can affect approaches to learning. In a case study examining practices for using a learning object for Java programming, the students in China were studying Java in their third year after they had learnt C programming, while the British students were introduced to Java in their first year. Prior knowledge in the content area would obviously have an influence on their approach to learning irrespective of cultural factors *per se*.

Interest in the social aspects of learning and the increasing technological affordances of online environments has led to a growing emphasis on the collaborative constructivist paradigm as the learning model for most online courses (Goodfellow & Lamy, 2009; Mason, 2003, Pincas, 2001). An argument has been made by a few practitioners (e.g. Holzl, 1999; McLoughlin, 2007; Murphy et al., 2007; Smith & Ayers, 2006) that a constructivist learning model solves the problem of student diversity.

Nevertheless, as one researcher found, "Constructivist-based pedagogy couched in the highly interactive communication world can be a lonely place for an international online learner whose cultural experiences are different than the dominant educational cultures" (Moore, Shattuck and al-Harthi, 2005, p. 10). As Goodfellow and Lamy (2009) point out, the social constructivist paradigm that is typical of the current "so-called Western /Anglo approaches to online learning" favours dispositions that are associated with the Western dominant cultural types such as individualism and acceptance of risk (p. 174). In terms of workplace e-learning, Remtulla (2010) also argues that current training practices are based and designed on

constructivism. This approach favours the European and Western schema of work and training; choosing greater investments in technology while overlooking the social experiences and cultural needs of the diverse multicultural workforce.

Furthermore, caution also needs to be exercised before applying a 'constructivist-style' approach because as Kirshner, Sweller and Clark (2006) note, minimally guided instruction is less effective and less efficient than instructional approaches that place a strong emphasis on guidance of the student learning process. Learners need to have a sufficiently high level of prior knowledge before internal guidance can be applied.

However, "the label 'constructivism' represents a wide array of views and stances" (Remtulla, 2010, p. 50) and there is usually insufficient information given in these frameworks to depict the specifics of a "very rich and complex set of theories" (Belise, 2007, p. 9). Nonetheless, it is unlikely that applying constructivist principles to the design of online learning environments is sufficient to solve the problems and misunderstandings experienced by learners coming from different educational traditions. Wang and Reeves (2007) recommend more cross-national research to understand and compare the effects of online learning across difference cultures. In particular, there is a need for research that examines how different pedagogies are perceived in different cultures.

Subject discipline cultures

Communities and organizations also have cultures (Collis, 1999; Pincas, 2001; Rogers & Steinfatt, 1999). Collis (1999) identified subject-area disciplines as a dimension that was sensitive to culture related-differences in terms of the acceptance, use and impact of computer-

related learning resources. Based on extensive research, Becher (1989) and Donald (2002) have shown that subject area disciplines have their own cultures.

Disciplinary culture refers to "the theories, concepts, norms, terms, and so on of a particular academic discipline" (Flowerdew & Miller, 1995, p. 366). This includes specialised vocabulary and the relation between the structure of the body of knowledge of a particular discipline and the discourse and related structures. Flowerdew and Miller (1995) noted a considerable variation in discourse structure across disciples. For example, in law the lecture discourse was often structured around a series of problem-solving tasks designed to illustrate a specific legal point, while in computer science the discourse pattern was one of a repeated pattern of problem-solution.

While there is acknowledgement that there are differences in the way subject disciplines are taught, there is still a lack of knowledge regarding how these disciplinary differences should be incorporated into online practices.

Kemp and Jones (2007) noted that, "Research investigating disciplinary differences has not been fully developed to explore whether such disciplinary and subject differences affect the ways in which digital resources are conceptualized, or whether disciplinary differences combine with student academic progression to affect staff and student use of digital resources" (p. 53). Therefore, they interviewed 19 faculty members at a U.K. university. A second interview was conducted later to give a longitudinal aspect to the study, but only nine participants were available. Based on this rather limited number, the researchers found that in Physics, Engineering and Mathematics, the use of digital resources was closely related to the use of specialist software. In social sciences, such as Politics and Applied Social Sciences, the staff they

interviewed were most interested in the use of particular types of Web based materials. These subjects needed access to the most current up-to-date material. Finally, some of the humanities such as Languages were interested in access to news media such as local language newspapers.

In one of the few longitudinal studies, Smith, Heindel and Torres-Ayala (2008) investigated differences in online Course Management System (CMS) tool usage between disciplines (hard-pure, hard-applied, soft-pure, and soft-applied) over a five year period. They found many statistically significant differences in CMS tool usage. For instance, the hard-pure courses made greater use of the test and Question Pool features than the other discipline courses did. The authors attributed this as a response to the discipline's "emphasis on learning facts and figures, and the need to quantitatively measure that knowledge" (p. 158). Overall, the authors (Smith et al., 2008) found the most salient differences occurred between the pure and the applied disciplines. They further suggest that over the five years of their study (2002 to 2007), e-learning in the pure disciplines had become more commoditized, while e-learning in the applied disciplines had become more diversified and more oriented to community practice.

Mason (2003), noting the differences in skills, approaches to learning, and habits of studying between, for example, science and arts students, has called for further studies on student readiness for online learning across a range of curriculum areas. More specifically, Cleveland-Innes (2005) argues for more support for disciplinary differences by: clarifying and making explicit underlying disciplinary teaching practices; identifying technologies best suited to teaching and learning in disciplinary categories; and ensuring that access, choice and flexibility, key principles of distance and distributed learning, are maintained across disciplines.

Theories informing global e-learning

Social presence

"Social presence" is a social factor that has been studied by communication researchers. It refers to the degree to which a person feels socially present in a mediated situation, or the degree to which a person is perceived as a real person (Gunawardena & McIssac, 2004). It has been found to be a strong predictor of learner satisfaction in an academic computer-mediated conference (Gunawardena & Zittle, 1997). Indeed, social presence can be linked to the larger social context including motivation, interaction, group cohesion, verbal and nonverbal communication, and social equality (Gunawardena & McIssac, 2004).

A few studies have begun to examine cultural perceptions of social presence. For example, in a qualitative study of six Chinese graduate students, Tu (2001) identified difficulties experienced by these six students in the areas of social presence (social context, online communication and interactivity) and issues of privacy. For instance, the Chinese students were reluctant to participate in discussion forums without the encouragement of the online instructor and tutors, and an invitation to a real time chat with the teacher caused anxiety because "they didn`t have time to prepare the conversation" (Tu, 2001, p. 53). Despite meeting the requirement for passing the TOEFL (Test of English as a Foreign Language) examination, language competence posed a major barrier in online communication. The potential for feedback contributes to a strong level of social presence, but when response times to the students' online messages exceeded expectations, the perceived social presence was lessened. The perception of privacy also affects the degree of social presence with a less private setting resulting in a decreased perception of social presence by users. However, the Chinese students that Tu (2001) interviewed expressed concern that their messages may appear in online public areas and cause

them to lose face as well as privacy. For example, one student said, "the teacher quoted my original message and sent it to all the recipients. I was so embarrassed. I hoped I didn`t say anything improper or offensive. I understand that the teacher just wanted to save time" (p. 56).

In a cross-cultural study of group process and development in online conferences Gunawardena et al. (2001) found that social presence was a theme addressed by both U.S. and Mexican focus group participants. However, the American participants felt that social presence was important for the smooth functioning of the group, while the Mexican participants felt that having personal information about the participants was not important. The way interaction works online and how participants contribute to the conference was considered much more important.

Richardson and Swan (2003) found a significant positive correlation between students' overall perceptions of social presence and their perceived learning and perceived satisfaction with the instructor. In addition, students' perceptions of social presence, overall, also contributed significantly to the predictor equation for students' perceived learning overall. Gender accounted for some of the variability of students' overall perception of social presence, with women perceiving a higher social presence than men. Age and number of college credits earned did not account for any of the variability.

However, in contrast to the findings of Richardson and Swan (2003) and others such as Rovai and Baker (2005) regarding gender and social presence, a few researchers (Kim, 2010; Kim, Kwong and Cho, 2010) found that male students had significantly higher mean social presence than female students. These authors note that unlike other studies which have taken place in a 'western' context, their studies took place in a Korean context where men are more likely to participate more actively in social engagement. Clearly, given the importance of

perceived social presence on learner satisfaction, perceived learning, and possibly feelings of alienation and isolation within an online course experience; further studies are needed to examine the relationship between social and cultural differences on perceived social presence.

Cross-cultural communication theories

As the significance and role of culture in the online environment is a relatively new area, some researchers and practitioners have looked to the field of cross-cultural communication to inform practice. Several cultural dimension (N-factor) models have been developed. A dimension is an aspect of a culture that can be measured relative to other cultures. It comprises a number of phenomena in a society that were empirically found to occur in combination and this dimension represents a continuum from one extreme to the other (Hofstede, 1980).

Hall's Time and Contextualisation. One of the earliest researchers in this area is the anthropologist Edward T. Hall (1976, 1990). In addition to his work on proxemics, which is of less interest when dealing with an online environment, he looked at time use in different cultures. He created the term polychronic to refer to the ability to work on several activities at the same time. This is in contrast to monochronic individuals who tend to work in a sequential fashion. The Anglo-American tradition, found in distance education, favours a sequential approach. In addition, "The meaning of silence closely corresponds with cultural orientations towards time" (Gunawardena & LaPointe, 2007, p. 598). Silence in computer-mediated communication (CMC) could be interpreted as lack of interest or inattention when in fact the student is signalling respect. Pincas (2001) postulates that cultural variations in the use silence may account for lack of participation in online discussions.

Another often quoted dimension of culture is described by Hall (1976) as contextualisation; or low-context versus high-context communication. According to this model, in high-context cultures the meaning must be inferred or extracted from indirect verbal and non-verbal messages. Many of the Asian countries would be considered high-context cultures. In contrast, low-context cultures obtain meaning from the information provided by the explicit code of the message itself. For example, the U.S.A., the U.K. and Germany would be considered low-context cultures. However, high and low context is best conceptualized along the cultural continuum. No culture exists exclusively on one end of the continuum. All cultures contain both high and low context communication behaviours. It is the predominance of either low context or high context communication behaviours that determines whether a culture is considered high or low context. Nevertheless, a diametric view of low-context and high context cultures, as shown in Table 2, can be useful to illustrate the concepts.

As an illustration of these differences, in their study of Finnish, Korean and American undergraduate pre-service teachers' online collaborative behaviours, Kim and Bonk (2002) found that the Korean students demonstrated the highest level of social interaction behaviours. They attributed this difference to the high-context communication nature of Korean culture. Similarly, in another study involving a comparison of Australian and Fijian students, Frank and Toland (2002) found that the Australian students posted significantly more messages and volunteered more answers to questions. The messages that the high-context Fijian students did post tended to be social in nature, or to ask questions about assignments. Many researchers are concerned that the low-context communication nature of CMC favours learners from low-context cultures (Smith & Ayers, 2006).

Table 2

Characteristics of high-context and low-context cultures (Main, 2002 as cited in Bentley et al., 2005)

High-context culture	Low-context culture
Implicit messages	Explicit messages
Internalized messages	Plainly coded messages
Non-verbal coding	Verbalized details
Reserved reactions	Reactions on the surface
Distinct in-groups and out-groups	Flexible in-groups and out-groups
Strong people bonds	Fragile people bonds
High commitment	Low commitment
Open and flexible time	Highly organized time

Finally, research has indicated that low and high context communication is a function of the individualism and collectivism cultural dimension (Kim & Bonk, 2002). Low-context cultures tend to be individualistic, and high-context cultures tend to be collectivist (Wurtz, 2005). The individualism and collectivism cultural dimension is discussed under Hofstede's cultural dimensions.

Hofstede`s Five Cultural Dimensions model. One of the best-known and most cited bodies of cross-cultural communication research is Hofstede's (1980) extensive study. In his original work 116,000 participants responded to a 32 item questionnaire. Factor analysis showed that three factors together explained 49% of the variance. One of these factors was split into two parts, power distance and collectivism, "because they are two conceptually different issues" (p. 309). The second phase of his research was developed to validate the four dimensions on other data collected from other populations. Finally, in the third phase the database was extended with another 10 countries. The labels chosen for the four dimensions and their descriptions are as follows.

Individualism vs. Collectivism: individualist cultures assume that a person looks primarily after their own interest and that of their immediate family. In collectivist societies loyalty is expected in return for protection.

Power distance: defines the extent to which the less powerful persons in a society accept inequality in power.

Uncertainty avoidance: defines the extent to which are made nervous by situations which they perceive as unstructured, unclear, or unpredictable.

Masculinity vs. femininity: refers to the extent of role definition in a society by gender.

"Each of these terms already existed in some part of the social sciences" (p. 23) and the dimension of individualism-collectivism is widely accepted by cross-cultural researchers to be the major dimension that explains intercultural differences in behaviour (Gunawardena et al., 2003). Although Hofstede was most interested in business situations, as an anthropologist he also looked at the educational world, especially in his work with Bond. He noted (Hofstede, 1986)

that problems can arise when a teacher and student come from different cultures. These cross-cultural learning situations can encounter difficulties due to the differences in the social positions of teachers and students in the two societies, differences in the relevance of the curriculum for the two societies, differences in the profiles of cognitive abilities between the two societies, and differences in expected patterns of interaction. From this work a fifth dimension of *Long-term vs. Short-term orientation* was added for Confucian countries (Hofstede & Hofstede, 2005). "*Long-term orientation* (LTO) stands for the fostering of virtues oriented toward *future rewards – in particular, perseverance and thrift.* Its opposite pole, *short-term orientation,* stands for the fostering of virtues related to the past and present – in particular, respect for tradition, preservation of 'face', and fulfilling social obligations" (p. 210).

Some of Hofstede's (1980) cultural dimensions correlate significantly with the CANOE Five-factor model of personality (Hofstede & McCrae, 2004). The three strongest correlations are: individualism with extraversion, uncertainty avoidance with neuroticism, and power distance with conscientiousness (Hofstede & McCrae, 2004). Most researchers (Gunawardena et al., 2003; Moore et al., 2003; UNESCO, 2002) agree that Hofstede's work on cultural dimensions is seminal. However there have been some criticisms of Hofstede's dimensions, e.g. the sample was based on a single multinational organization and subjects were predominately middle-class males. Hofstede (2002) emphasizes that the survey measured differences between national cultures. The IBM set of data comprised unusually well matched samples from a large number of countries. Gunawardena, et al. (2001) have pointed out that indeed the greatest challenge to conducting cross-cultural research is finding equivalent samples for comparison in quantitative studies. In addition, as Williamson (2002) argued, in countries such as Taiwan where cultures are very different from that of IBM's home country, the USA, the staff would likely be more

unrepresentative of their national culture, as IBM would be hiring local staff atypically attuned to US norms. Therefore, if anything, Hofstede's research would have underestimated differences between national cultures.

Hofstede (2002) concurs with the criticism that nations are not the best units for studying cultures, but points out that "they are usually the only kinds of units available for comparison and better than nothing" (p. 1356). Other researchers such as Maitland and Bauer (2001) concur with this view. Nevertheless Hofstede adds that "where it is possible to separate results by region, ethnic, or linguistic group, this should be done" (Hofstede & Hofstede 2005, p. 19) and he does differentiate, for example between French-speaking and English-speaking Canada. Finally, Hofstede (2002) reminds us that dimensions are constructs, "which have to prove their usefulness by their ability to explain and predict behavior" (p. 1359).

Despite the criticism, Hofstede's dimensions have provided the framework for several studies: receptivity towards distance education (Anakwe, Kessler, & Christensen, 1999), differences in perception of the online group process and development (Gunawardena et al., 2001), learners' motivation in an online course (Lim, 2004), a study of the global diffusion of the Internet (Maitland & Bauer, 2001), an analysis of websites in order to formulate guidelines for globally sensitive user-interfaces for the Web (Marcus & Gould, 2000), and students' perceptions of their online learning experiences (Wang, 2007), to name but a few.

Trompenaars and Hampden-Turner's seven dimension cultural model. Similar to Hofstede, Trompenaars and Hampden-Turner (1998) were also interested in intercultural communication in the business world. They compare the concept of culture to an onion. In order to understand it, you have to unpeel it layer by layer. The outside layer represents a culture's explicit cultural artefacts and behaviours. The middle layers symbolize a community's cultural

standards and models that serve as the foundation for all that is visible. Finally, the heart of the onion represents a community's values, mental states and cognitive processes, or in other words, its implicit nature.

They stated that a useful way of thinking about culture is to consider it as "the way in which a group of people solves problems and reconciles dilemmas" (Trompenaars & Hampden-Turner, 1998, p. 6). These problems fall under three general areas: those which arise from our relationships with other people; those which come from the passage of time; and those which relate to the environment.

Based on 30,000 responses to their questionnaire, Trompenaars and Hampden-Turner (1998) identified seven dimensions or orientations to culture: universal versus particular (rules), individualism versus communitarianism, affective versus neutral (feelings and relationships), specific versus diffuse (how far we get involved), ascription and performance (how status is accorded), how we manage time, and how we relate to nature.

Trompenaars and Hampden-Turner's (1998) work does not appear to be as well known as Hofstede's, but there are a few examples in the online learning literature. For example, Dunn and Marinetti (2002) illustrate how Trompenaars and Hampden-Turner's (1998) five dimensions, arising from our relationships with other people, can be used to determine which aspects of an online course need to be adapted for a local setting. As localisation of e-learning courses is expensive, they recommend isolating the minimum elements that require adaptation. As an illustration, Dunn and Marinetti (2002) describe a course that could be used with Italian and American audiences. Although the majority of the course would remain the same, there would be some adaptation. For example, for the high ascription Italians, the online tutor or expert would be presented as more authoritative than in the American version.

For Trompenaars and Hamden-Turner, culture resides in the ways in which its explicit and implicit aspects are used. As with Hofstede's work, the seven dimensions of Trompenaars and Hampden-Turner derive from differences in national culture, and care should be taken when considering individuals.

Instructional design

In a borderless educational environment, students located anywhere in the world can register for the course. Since it is impractical for course designers and instructors to be knowledgeable about the cultures of every student who is likely to take the course (Bentley, Tinney, & Chia, 2005; Palloff & Pratt, 2003), how can they be culturally sensitive when designing an online course to avoid some of these problems and concerns? Many researchers (Collis, 1999; McLoughlin, 1999; Wild, 1999) argue that the first step in the process of becoming more culturally competent is recognizing that instructional design is not culturally neutral. In fact, there are cultural influences operating on the authors and instructional designers of online learning materials, such as the instructional designer's world view, the designer's values, ideologies, culture, class and gender, and the designer's commitment to a particular design paradigm (Henderson, 1996) and similarly, influences that impact on the interpretation of such materials by learners (Wild & Henderson, 1997).

In brief, instructional design is, "The theory and practice of design, development, utilization, management and evaluation of processes and resources for learning" (Seels & Richey, 1994, p. 129). In other words, instructional design is the analysis of learning needs and the systematic development of instruction, but as argued earlier learning needs vary by culture. Furthermore, one of the limitations in current instructional design models is that, "they do not

fully contextualise the learning experience, and are themselves the product of particular cultures" (McLoughlin & Oliver, 2000, p. 58).

In her seminal work, Henderson (1996) noted that, "Approaches to instructional design not only reflect differing world views, but they consist of values, ideologies, and images that involve inclusions and exclusions that act in the interests of particular cultural, class, and gendered groups" (p. 87). She identified three design paradigms that were commonly being used, each of which reflected a particular world view with corresponding values, pedagogies, inclusions and exclusions. The *inclusive (or perspective)* paradigm imports the social, cultural and historical perspectives of minority groups, but does not challenge the dominant culture and tends to be superficial. The *inverted curriculum* approach attempts to deliberately design an instructional component from the minority perspective. However, there is the risk of "soft" multiculturalism, which diminishes the complex issues in cultural contextualization and leads to "surface inclusivity" for example by including the exotic or tokenism, and fails to provide the learners with educational valid experiences as it does not admit them into the mainstream culture. Thirdly, the *culturally unidimensional* paradigm excludes or denies cultural diversity, and assumes that educational experiences are the same for minority students as they are for others.

Due to the limitations of the existing paradigms, Henderson (1996) proposed a *multiple cultures* model of instructional design, which she further refined in 2007. Henderson's (1996) Multiple Pedagogic Model of Interactive Multimedia Instructional Design was adapted from Reeves' (1994) fourteen pedagogical dimensions of computer-based education; epistemology, pedagogical philosophy, goal orientation, experiential value, teacher role, program flexibility, value of errors, motivation, accommodation of individual differences, learner control, user

activity cooperative learning, and cultural sensitivity. Each of these dimensions is based on some aspect of a learning theory. Reeve's purpose in describing these dimensions was to provide improved criteria for evaluating computer-based education. Each dimension is represented as a continuum between two extremes: for example, in the case of epistemology, an objectivist view versus a constructivist view and for the motivation dimension, extrinsic versus intrinsic. Reeves (1997) added cultural sensitivity as the fourteenth dimension after feedback from Henderson. However Henderson (1996) argues that cultural contextuality is always a variable, and that all of Reeves' (1994) dimensions are social constructs that have meaning only because of the selective, academic traditions in which they are situated.

McLoughlin (1999) made use of Henderson's (1996) multiple cultures model to develop an online unit for Indigenous Australian learners for a pre-university bridging course at Edith Cowan University in Western Australia. The Indigenous and mainstream cultural values were integrated into the course content and activities as becoming bicultural was a part of enculturation into tertiary study, and a prerequisite for academic success.

In fact, Henderson (2007) has expanded her 1996 model. She argues that her model has been confirmed as a "workable premise" because of researchers such as Collis (1999) "tweaking it for their own contexts" (Henderson, 2007, p. 135).

According to Collis (1999), the pedagogical approach and technology of an online course should anticipate users' choices from among numerous variables that express culturally specific values. This means that all systems, from the start of the design process, must integrate this notion of flexibility. Collis, Vingerhoets and Moonen (1997) identified seven dimensions of a

course where the notion of flexibility can be applied, and where the student in a distance learning situation could make a choice. These seven dimensions involve:

- social organization of the course

- selection of course content, progression, and learning activities

- selection of course materials

- selection of a mode of interaction in the course

- selection of the technological platform supporting the course

- language(s) used in the course, and;

- the conditions under which the course is given (entirely distance or a hybrid approach)

Additional factors include desired time flexibility, instructional approach, terms of admission to the course, assessment of learning, and so on. However, it is not always possible or even practical to implement such flexibility.

Seufert (2002) took the notion of flexibility and added two more dimensions, proposing a three-dimensional model with three interacting categories of considerations that should be taken into account when designing an online course that responds to cultural diversity:

- "flexibility" and "variety" of technological and communications tools, methodologies, the roles of instructors and students in a variety of learning situations, and the resources drawn on as part of a course's pedagogical framework

- simplicity in the choice of technological tools and their utilization, and regarding the types of interactions, structure of activities, etc.

- awareness of the multicultural context and cultural differences, and thinking about online discussions and interactions, course format, content and progression, materials, etc.

As a last example, in their qualitative study of instructional designers, Rogers, Graham, and Mayes (2007) identified three main barriers facing those who wish to create culturally-sensitive online instruction. Firstly, there is an over focus on content development with little to no consideration of context. Secondly, there is a relative lack of evaluation in real-world practice. Finally, the instructional designers are in a role where they are mainly given predetermined tasks to accomplish without the freedom, resources, or flexibility required for culturally sensitive design and development. In response, Rogers, Graham, and Mayes (2007) proposed a bridge-building model which includes: engaging in a deeper learner-centred needs analysis; allowing for more flexibility in the design process; investing more thought and time to separating deeper principles from particular application; and educating other stakeholders, such as the client and subject matter expert, so they are also invested in adaptations based on cultural considerations.

In summary, in 1997, Branch called for instructional design that is culturally sensitive. Yet Subramony (2004) stated that the instructional design research and development community "is continuing to ignore important issues of cultural diversity among learners" (p. 19).

Limitations and gaps in the current research literature

Although there is currently a lack of empirical evidence related to the impact of culturally-related variables in a global learning environment, concerns continue to be voiced. For example, in a study (Tapanes, Smith & White, 2009) of two online courses taught at American

universities, statistically significant differences were found between the perceptions of students coming from minority collectivist cultures and American students regarding their experiences in the course. In contrast to the mainstream American students, learners from the minority collectivist cultures: tended to view their instructors as unaware of educationally relevant cultural differences; reported that their cultural background was not being considered; and, furthermore, such consideration was important to them. In addition, these learners reported feeling less motivated, more silenced and more alienated than their peers from the individualist majority culture (Tapanes et al., 2009). Hannon and D`Netto, (2007) also found that, compared with local students, international students studying online were significantly less satisfied with the course, especially with organizational and technological issues, felt more isolated, and less engaged.

In 2003, Mason called for more research into the issue of student readiness for online learning in a global context. She points out that studies suggest students who are older, studying at the postgraduate level with easy access to a personal computer, self-confident, and willing to interact with their peers online will be more successful on global courses than those who begin without these attributes (Mason, 2003). She asks "how can courses prepared for students of one culture and educational paradigm work successfully for students unfamiliar with the language and educational practices of another country" (Mason, 2003, p. 751).This question still remains unanswered and Moore, et al. (2006) describe the issues surrounding global online learning as a problem that has not yet been identified, nor understood in terms of a pedagogical issue (p. 2).

Yang, Wang and Drewry (2009) point out that there is a"lack of theoretically grounded work examining the relationship between cultural factors and training process" (p. 331). As Wang and Reeves (2007) note, the lack of research-based studies concerning the cultural aspects of online learning and teaching can be partly explained by the difficulty in identifying

appropriate methodologies and a lack of adequate resources for this type of research. Gunawardena et al. (2003) have also stated that the, "greatest challenge to conducting cross-cultural research is finding equivalent samples for comparison in quantitative studies" (p. 771).

Despite the criticisms levelled at Hofstede's work, it is based on an extremely large sample size. In discussing Hofstede's five cultural dimensions and Hall's work on low and high context culture with respect to website usability Smith (2004) acknowledges that there is a "lack in explicit demonstration that such theories of culture are actually applicable to, and significant within, the usability of web-based systems" (p. 279) but hastens to add that his personal experience supports the application of such theories in a general context. He does not appear to be alone in this belief. Despite criticism and caveats, Hofstede's cultural dimensions have provided the framework for several studies.

Summary

This chapter provided definitions of e-learning and culture and provided a brief overview of the literature reviewed for a study regarding the challenges faced by e-learners in a global context. Specifically, it drew from the areas of culture in face to face education and subject discipline cultures. The contribution to research studies from the theories of social presence and cross-cultural communication theories, such as those of Hall, Hofstede, and Trompenaars and Hampden-Turner were also outlined. Finally, the literature review ended with an overview of instructional design and the limitations of current models for global e-learning courses.

The description of the methodological approach taken to answer the research questions, as well as the presentation of the results and their interpretation, are provided in the following chapters.

Chapter 3

Methodology

The growing emphasis on lifelong learning, combined with the change to knowledge-based economies, and the specialization within many professions, has led to demand for targeted education and training from a widely dispersed and diverse body of learners (Parrish & Linder-VanBerschot, 2010). The use of Information and Communication Technologies (ICTs) to deliver tertiary education courses and training programs is increasing, and there are a growing number of learners who are participating in e-learning courses designed and delivered by members of a cultural group other than their own. Some researchers, such as Bates (2001), Collis (1999), Gunawardena and LaPointe (2007), Mason (2002, 2003, 2007), Moore, Shattuck and Al-Harthi (2006) and Palloff and Pratt (2001), to name but a few, have raised concerns that these global learners may be at an unnecessary advantage. However, much of the literature addressing this problem tends to be descriptive and anecdotal. In particular there is a lack of larger sample-size studies.

The following sections of this chapter outline the study's purpose, identify the sample, describe the development of a questionnaire used to collect data to answer the first two research questions, and explain the rationale for the use of an existing instrument to answer the third research question. Data collection and analysis procedures are also explained.

Research questions

This research study asked the following research questions:

1. What are the characteristics of the particular challenges that global learners encounter in an online setting?

2. What are some of the ways that cultural and linguistic differences manifest themselves as difficulties and opportunities in global online learning environments?

3. Do current theories regarding the influence of culturally related factors in online learning cast light on research results?

Selection of a research method

McGrath argued that the research process can be viewed as "a set of dilemmas to be 'lived with'; and (...) as an effort to keep from becoming impaled on one or another horn of one or more of these dilemmas" (as cited in Reiche & Harzing, 2007, p. 1). Mixed methods research offers strengths that offset the weaknesses of both quantitative and qualitative research (Creswell & Clark, 2007).

This study utilized a mixed methods approach, employing both quantitative and qualitative data collection and analysis techniques. Quantitative research is seen as weak in understanding context, and the voices of participants are not directly heard (Creswell & Clark, 2007). This is obviously a great disadvantage when trying to identify the challenges faced by global learners. On the other hand, qualitative research is limited by the bias introduced by the personal interpretations made by the researcher (Creswell & Clark, 2007). Furthermore, there has been a lack of larger sample-size studies with sufficient power and control of extraneous variables to identify the effects of cultural dimension. Thus, a large scale cross-sectional survey with open and closed questions is an appropriate method for answering the research questions in this study.

Cross-sectional survey designs are useful for describing the current attitudes, opinions, behaviours or characteristics of a population and can be used to compare two or more

educational groups (Creswell, 2002). Furthermore, survey designs are frequently used to understand important beliefs and attitudes (Creswell, 2002). Thus a survey is an appropriate tool for soliciting the opinions of a large body of diverse e-learners.

Web-based surveys in particular are economical and are widely viewed as being the least costly means of conducting a quantitative survey (Frippiat & Marquis, 2010). In addition, data can be quickly gathered (Frippiat & Marquis, 2010) and researchers can reach a geographically dispersed population - a particularly attractive advantage for globally focused studies.

One cited disadvantage of relying on web based surveys is the disparity in access to the Internet (Frippiat & Marquis, 2010), ICT competence and language issues. However, in this study, all the possible respondents had access to a computer and the Internet through the workplace, and due to their job requirements could be safely assumed to have adequate ICT and language capabilities. Furthermore, for this study all possible respondents could be contacted via the organization's internal communication system, thus all individuals had a non-zero probability of being included in the sample.

Participants and setting

Participants in this survey are adults working for a non-governmental agency (NGO) who are currently participating in training programs employing some form of e-learning. The number of potential participants was estimated to be 6,000 and all of them were invited by an email message from the organization's learning officer to participate in the study.

The setting is an international NGO, however, the staff are widely dispersed; therefore the survey was web-based. It was administered using the well-known web-based survey tool "SurveyMonkey".

Instrumentation

A search of the literature was performed for an established questionnaire appropriate for answering the three research questions. However, one was not found that could comprehensively address the issue of the characteristics of challenges faced by global learners, as well as the encountered cultural and linguistic difficulties and opportunities. There were, on the other hand, existing questionnaires designed to answer the third research question regarding current theories regarding the influence of culturally related factors. Thus, the survey on which this study is based was comprised of two parts: a researcher-developed questionnaire to answer the first two research questions, and a published instrument, the Von Till-Stull Questionnaire, to answer the third research question.

Researcher-developed part of questionnaire. The relevant literature was reviewed for background study and several challenges surfaced with some frequency. Language issues merited a special set of questions for non-native speakers of English. Several researchers have stressed the difficulty of addressing implicit assumptions about learning and teaching, including, but not limited to, differing world views and epistemological beliefs, cultural discontinuities related to the perceived roles of the learner and instructor and communication conventions. Therefore, in order to tap into these often unarticulated beliefs, three typical e-learning scenarios were portrayed and learners were asked to describe the limitations and the advantages of each scenario for their particular learning situation and then to suggest changes to the scenario. This type of response is more time consuming to analyse but provides a richer data set more suitable for this sort of exploratory study.

In summary, the first part of the survey solicited demographic information, such as gender, age, mother tongue, and nationality. Due to the potentially sensitive nature of culturally influenced questions regarding learning, these fairly neutral and easy to answer questions were asked at the beginning of the survey to help put the respondents at ease.

In the next section, participants were then asked to evaluate three typical approaches to designing e-learning courses: a problem-based dispersed team approach, a self-paced stand-alone computer module, and a virtual classroom conducted through webinars. A problem-based learning approach was chosen as one of the scenarios for the questionnaire because the Learning Solutions Office of the NGO was interested in introducing this approach. The second scenario, the self-paced stand-alone computer module, or computer-based training module, was chosen because this was the scenario commonly used in the NGO. Finally, a virtual classroom, or webinar based scenario, was chosen for two reasons. There was interest by the Learning Office in introducing this approach, and webinars might be seen as more culturally appropriate because they mimic the traditional face to face classroom more than the other two scenarios.

Participants were first asked to indicate their interest in taking a course organized in one of these three ways using a four point Likert scale. Then, they were asked for comments regarding the limitations, advantages, and suggested changes for each scenario. These open-ended items were included for two reasons. First, by approaching learners' opinions about learning from both quantitative and qualitative directions provides triangulation useful for determining the extent to which the quantitative findings are validated by the qualitative findings. Secondly, open-ended questionnaire items were added in order to hear from the global learners directly, and better understand their opinions. In addition, the qualitative data adds richness and detail to the findings.

The third section of the survey asked participants to agree or disagree with seven statements related to attitudes towards learning, such as the meaning of silence in a training situation. For reasons previously given, i.e. for triangulation and richness, an open-ended item question was placed at the end of each Likert question for respondents to make additional comments.

The fourth section was for learners who were non-native speakers of English, and they were asked to agree or disagree with five statements related to learning in another language. Again, as with the previous sections, an open-ended item question was placed at the end of each Likert question for respondents to make additional comments.

Von Till-Stull Attitude Questionnaire. To answer the third research question, regarding the usefulness of theories of cultural dimensions, the Von Till-Stull Attitude Questionnaire was also administered. The Von Till-Stull Questionnaire was chosen over Hofstede's (1980) questionnaire because Hofstede's questionnaire contains a very large number of questions, and these questions are now dated so there would not be matched samples with which to compare in the literature. Stull and Von Till (1994) used an instrument approach based on Hofstede's first four dimensions to study culture in education settings (Waldrip & Fisher, 1998) and thus, their questionnaire seemed to be a more appropriate instrument for this study of the challenges encountered in global e-learning.

Stull and Von Till (1994) state that the items for their questionnaire were:

constructed intuitively and then compared with the features of the Dogmatism Scale, The California F-Scale, the Australian Ethnocentrism Scale and the Opinionation Scale (Rokeach, 1960, 1968, 1979); the "Is of Identity" Test (Weiss, 1954); the "HERMES"

Attitude Survey Questionnaire (Hofstede, 1980); and the Tolerance for Human Diversity Index (Byrd, 1993, pp. 192-197). The instruments are noticeably similar in the types of items and the way in which the items are presented (p. 18).

They used their 40 item Likert-style scale questionnaire with 535 college students in the U.S. to compare power distance, uncertainty avoidance, individualism and masculinity with birthplace, number of generations born in the U.S., languages spoken at home, cultural identification, exposure through living in another culture, travel, and formal study of cultures. Statistical analysis showed that groups did discriminate among items.

Pilot test. Candidate questions from the researcher generated questionnaire and the complete 40 item Von Till-Stull attitude survey were combined into one instrument. The instrument was piloted with 40 volunteers from the Learning Solutions Office of the NGO in May 2011. Several of the Learning Officers were concerned that the amount of text would discourage people from completing the survey, and they suggested simplifying a few of the questions. Three main changes were made.

The question asking them to rate their technical skills with computer systems and various programs was modified to asking them to describe their feelings about using computers in general (enjoy, feel OK, use them only because I have to in my work, or try to avoid using them. Descriptions of the three e-learning scenarios were shortened in consultation with the NGO's Learning Officers. Finally, in the Von Till-Stull questionnaire the word "company" was replaced with "organization".

Data collection procedures

Participants were invited to take part in the study through an email, which was sent from the Learning Solutions Office. There was a link in the email that allowed them access to the survey through the organization's network system. This was the procedure that was commonly used in the organization to collect data, and the organization's employees were familiar with this system.

The survey was available online for two weeks in the summer of 2011, which was an appropriate time frame given the work responsibilities of the potential respondents. An email reminder was sent out after one week, thanking those who had already completed the survey and asking those who had not, to do so. No limit on the number of responses was set. Data was downloaded as an Excel file to the researcher's personal computer for analysis.

Data analysis procedures

The survey responses contained both quantitative and qualitative data. After an inspection of the results, data from 79 respondents were removed because of incompleteness of data. Data were transferred from the downloaded Excel sheets into SPSS, a commonly used statistical program (Creswell, 2002). The qualitative data from comments regarding the three e-learning scenarios were analysed using a computer because of the large size of the database. Microsoft's Excel spreadsheet software was used to analyse the qualitative data because it could handle text and retain the relationship between the comment and the respondent's demographic data. Furthermore, the comments were typically short phrases, and rarely longer than a few sentences. Thus, there was little advantage in transferring the qualitative data from the Excel spreadsheets to another qualitative data analysis program.

Quantitative data. The program used for conducting the questionnaire online had some capability for preventing inappropriate responses; nevertheless the data still had to be examined and cleaned. Then, the data analysis began with the demographic data as a way to provide an overview of the sample. Descriptive statistics of variables such as gender, age, mother tongue, nationality, position within the organization, occupational background, and previous experience with e-learning were calculated using SPSS software.

The analysis then proceeded with the closed item Likert data. Interest in the three e-learning scenarios was indicated on a four point ordinal scale: "not interested", "might be", "interested", or "very interested". Comparisons among interest in the various e-learning scenarios and the demographic variables were conducted using the Chi-squared test. The seven statements related to attitudes towards learning also used a four point ordinal scale and were also compared to demographic variables using the Chi-squared test. In some cases, because of small numbers, data from Likert scales were reduced to the binominal level by combining all the agree and disagree responses into two categories of "agree" and "disagree".

The Von Till-Stull Attitude Survey employed a five point Likert scale (strongly agree, agree, neutral, disagree, and strongly disagree) and the responses to five questions were summed to give a final score for each of the eight dimensions. Cronbach's alpha was calculated for the 40-item test and for each of the eight sub-scales. Items were removed to improve the sub-scales.

Responses to the four dimensions measured on the Von Till-Stull Attitude Survey were compared with published data from Hofstede's (1980, 2005) study. In cases where a country was not part of Hofstede's study, such as many African and Eastern European nations, these countries were not included in the analysis.

Qualitative data. The qualitative data were first analysed and described separately from the quantitative data. For each of the three e-learning scenarios, there were data on limitations, advantages, and suggested changes. In other words, there were nine separate cases to be coded. The same procedure was followed for all nine cases.

Responses from individuals were contained in single cells of an Excel spreadsheet. For each response, the text was divided into segments and each segment was labelled in an adjoining column. A unique identification number was associated with all respondents. Therefore, segments could be sorted and combined with similar responses in a multitude of ways, while still retaining the connection to the original comment and the respondent's demographic information.

For the first round of coding data, respondents own words were used as much as possible. Comments that did not relate to the posed question were not included in the analysis. For example, if asked to describe the limitations of the online problem-based learning scenario and the respondent answered that they would have liked to have taken a course but they were not chosen, this comment was not coded.

At this time, the validity of the data was examined. Member checking was not possible because the researcher did not have access to the identity and contact information of the respondents. However, asking others, who are familiar with qualitative research as well as the content area of the research, to examine the data is an accepted approach to checking for qualitative validity (Creswell & Clark, 2007). Therefore, another researcher, who is familiar with qualitative research, e-learning, and experienced in working with culturally diverse groups of learners and instructors, independently divided the text into segments and labelled each segments for the limitations of the problem-based learning scenario, the computer-based training scenario,

and the webinar scenario, and the advantages of the problem-based scenario. Through face to face meetings, and telephone discussions, differences, and difficult interpretations of the initial codes were discussed and resolved. Due to the large amounts of data, the independent researcher was not asked to analyse the remaining five cases.

These initial codes were reduced by checking for overlap and redundancy. Gradually the codes were collapsed into four to five themes for each of the nine cases.

As Ryan and Bernard (2003) point out, theme identification does not produce a unique solution. Furthermore there is no decisive demonstration of theme validity, "but we can maximize clarity and agreement and make validity more, rather than less, likely" (p. 103). They recommend, first, making judgements of theme identification explicit and clear. Therefore, the results section of this study contains descriptions of the themes. Responses were examined and individual comments were selected that could clearly express the themes in the respondents' own words. Secondly, Ryan and Bernard (2003) recommend determining intercoder reliability. Therefore, the description of the themes for each of the nine cases was given to an independent reviewer, along with 20 randomly selected comments from each case.

The intercoder reliability between the researcher and an independent reviewer was calculated in two ways. Percent agreement, which reflects the number of times that the raters agreed on the theme, is widely used because it is both intuitively appealing and simple to calculate. The percent of total agreement across the two raters, i.e., the researcher and an independent reviewer, on 168 segments was 88.5%.

However, the methodological literature identifies percent agreement as a liberal measure that overestimates true intercoder agreement. Cohen's kappa coefficient tests whether agreement

exceeds chance levels and is generally thought to be a more robust measure than simple percent agreement. That is why this calculation was done on the same data and resulted in .803. According to expectations, the liberal measure yields a higher index than the conservative one. Both figures show an acceptable reliability level.

Finally, the raw numbers and percentage of each theme were calculated to indicate the strength of the theme.

Ethical issues

A Summary Protocol Form (SPF) for the pilot study was submitted to the Department's Ethics Committee and was approved. After minor modifications were made to the questionnaire, a SPF for the large-scale survey was submitted and approved.

Limitations

As with all surveys, the data are self-reported information (Creswell, 2002). Furthermore, those contacted may not be willing or able to participate (Dorofofeev & Grant, 2006) thus reducing the 'randomness' of a sample. Web surveys suffer from low response rates as compared to other modes of collecting data (Frippiat & Marquis, 2010). Although research has shown that material incentives do increase response rates and reduce the probability of dropping out before completing the questionnaire, the mean effect is small (Frippiat & Marquis, 2010). Therefore, no material incentives were used for this study.

For this study, the questionnaire was only administered in English.

Summary

Participants in this survey are adults working for a NGO, and are currently participating in training programs employing some form of e-learning. A total of 618 respondents participated in the online survey. The questionnaire included a researcher-developed instrument and a published instrument. Quantitative and qualitative data were collected and analysed using SPSS and Microsoft Excel.

Chapter 4

Results

As mentioned in Chapter I, the use of Information and Communication Technologies (ICT) to deliver training programs to a widely dispersed and diverse body of learners is increasing. Some researchers have become concerned that learners studying in a culture other than their own might be at an unnecessary disadvantage due to a variety of reasons including but not limited to: difficulties in studying in a second or foreign language; different communication styles; and differing expectations of student and teacher roles. To date, there has been a lack of larger sample-size studies with sufficient power and control of extraneous variables to identify the effects of cultural dimensions. This study examined the characteristics of the particular challenges that global learners encounter in an online setting; the ways that cultural and linguistic differences manifested themselves as difficulties and opportunities in global online learning environments and the usefulness of current theories regarding the influence of culturally related factors in online learning.

The survey on which this study is based (Appendix A) contained five sections. The first part of the survey solicited demographic information, such as gender, age, mother tongue, and nationality. In the next section, participants were asked to evaluate three typical approaches to designing e-learning courses: a problem-based dispersed team approach, a self-paced stand-alone computer module, and a virtual classroom conducted through webinars. The participants were asked to identify the limitations, the advantages, and suggested changes for each of the three learning scenarios. The third section asked participants to agree or disagree with seven statements related to attitudes towards learning, such as the meaning of silence in a training

situation. The fourth section was comprised of the 40-item Von Till-Stull Attitude Questionnaire designed to measure the theoretical cultural dimensions of *power distance, uncertainty avoidance, individualism and masculinity.* The final section was only for those participants who had identified themselves as non-native speakers of English.

The main findings of the survey will be presented according to the structure of the survey: the demographics of the survey population; challenges, difficulties, and opportunities for global e-learners through the lens of three common e-learning scenarios; linguistic challenges faced by non-native speakers of English; and the results of the questions designed to measure four theoretical dimensions of culture.

Demographics of survey population

Six thousand employees of an international non-governmental organization (NGO) were invited to participate in an online survey in the summer of 2011. Thus, a response from 617 participants was considered more than adequate, even when 79 responses were removed because of incompleteness of data, for a final study of 538 respondents. For a population size of 6,000 a response from a minimum of 362 people is required to have 95% chance of being within a 5% margin of error.

Survey respondents were asked to indicate their gender, age, first language (mother tongue), what other languages they used regularly, nationality, the number of years they had worked for the NGO, and their current professional area within the NGO. In addition, they were asked to describe their feelings about using computers in general using a 4 point Likert scale, and finally the number of times they had taken a course using a learning management system.

Slightly more females (53%) than males (47%) responded to the survey. Approximately two-thirds of the respondents were between the ages of 31 and 50. See Table 3 for details.

Table 3

Gender by Age Group (in percentages)

	Less than 31 years old	31-40	41-50	More than 50 years old	Total
Male	6.7	19.5	12.5	8.7	47.4
Female	11	18	13.6	9.5	52.6
Total	17.7	38.1	26.0	18.2	100

When asked to identify their mother tongue, 13.8 % of the respondents answered "English". They had used a pull down menu to indicate their mother tongue, but there was also a space to enter comments. A further 10 % used this space to indicate that their mother tongue included English plus another language. For example, one respondent said, "Arabic and English (I am also a US citizen)", while several respondents from Kenya and Tanzania answered English and Swahili, and nationals of Yemen answered Arabic and English.

Aside from English as a mother tongue or a co-mother tongue, survey respondents indicated at least one of their mother tongues coming from a further 75 languages; ranging from Afrikaans to Zulu. Francophones made up the second largest language group at 12.3% of the population. This included 9.7% who listed French only as their mother tongue and a further 2.6% who listed French plus another language as their mother tongue. The majority of bilingual

Francophones came from Francophone Africa and indicated French and English, or French and an African language as their mother tongues. Spanish was the third language group comprising 6.5% of the population.

In terms of nationality, 527 respondents identified themselves as nationals of 108 countries and a further 11 (2%) respondents did not answer this question. With such a diverse group there were too few respondents per country to reveal any statistical relationships. A breakdown by continent (countries by continent according to the UN) showed that 34% of the respondents were from Europe, 25% were from Asia, 22% were from Africa, 10% were from North America, 5% were from South America, and 2% did not indicate their nationality. A detailed breakdown of the number of respondents from each country is provided in Appendix B.

Although 8% of the respondents had worked for the organization for more than 20 years, the majority (62%) had been employed for fewer than 10 years. They came from a wide range of professional areas. In the survey, participants identified themselves as coming from one of 34 professional areas. For analysis, these areas were collapsed into 14 categories based on the recommendations of the organization's learning officer. The majority (80%) of the respondents came from one of the following five occupational categories: protection, administration, programme operations, field operations or information technology.

The majority (65%) of the participants indicated that they enjoyed using computers and a further 32% said they felt "OK about using them". Three percent said either that they use computers only because they have to in their work, or that they try to avoid using computers. The majority (68%) of participants had taken a course or training programme that used a learning management system at least twice and a further 12% had taken one course or programme using a

learning management system. The remaining 20% had never experienced studying with a learning management system.

In summary, the 538 respondents came from a wide variety of countries and language families. Half of them identified themselves as nationals of African, Asian, or South American countries. Less than a quarter of them had English, the language of training, as a mother tongue; but many indicated that English was a working language for them. The majority felt comfortable using computers and had some experience studying using a learning management system.

Challenges, Difficulties and Opportunities for Online Global Learners

To elicit the types of challenges that global learners encounter in an online situation and determine some of the ways that cultural and linguistic differences manifest themselves as difficulties and opportunities, participants were presented with three typical e-learning designs: a problem-based scenario, a stand-alone computer program, and a virtual classroom (webinar). They were first asked to rate their interest in learning under each situation using a four point Likert scale (not interested, maybe, interested, very interested). Next, they were asked to note the limitations and advantages of each learning scenario. Finally, they were asked what changes would they make to make this way of delivering a course more suitable for their learning situation. The three designs were presented in the questionnaire as follows:

Scenario 1 (problem-based learning): The course is structured around solving a real-world problem related to work in the NGO. You work as part of a geographically dispersed team to analyze the problem, make decisions on what needs to be done next, and act upon these decisions to resolve the problem situation satisfactorily within a given time frame. You communicate with each other using information and communication tools such as email, forums,

chat, etc. It is up to the learners to decide together how to analyze the problem in order to find a satisfactory situation.

Scenario 2 (computer-based training): You work alone at the computer. Several sources of information (within the course or links to material on the intranet or Internet) are provided. The computer asks you to study the content provided or look at the linked information. You are given a scenario about a real-life challenge and have to work through a sequence of questions which ask you to deal with the challenge. You have to search through the information provided to find the best answers. The computer judges how well you do in dealing with the challenge.

Scenario 3 (webinar): Learners sit at their own computer and are connected in real-time to a trainer and to others learners via the Internet. Through their computer learners can see and hear the trainer give a lesson at a pre-set time. Learners can ask and answer questions through the telephone or other technological tools.

The results for this section of the survey compare interest, limitations, advantages and proposed changes across the three scenarios. Table X provides a comprehensive summary of these results.

Interest in the three e-learning scenarios. Overall, respondents expressed interest in taking courses under any of these scenarios. Results indicated that 77% of the participants were interested or very interested in Scenario 1 (problem-based learning), 68% were interested or very interested in Scenario 2 (computer-based training) and 71 % were interested or very interested in

Scenario 3 (webinars). Relationships were found in between the various e-learning scenarios. If participants were interested in taking a course that followed one of the e-learning scenarios, then they tended to be interested in the other two scenarios. Interest in Scenario 1 and interest in Scenario 2 was significantly correlated, $r = .585$, $p < .001$. Interest in Scenario 1 and interest in Scenario 3 was also significantly correlated, $r = .468$, $p < .001$. Finally, interest in Scenario 2 and interest in Scenario 3 was significantly correlated, $r = .487$, $p < .001$.

A chi-square test of independence was performed to examine the relation between expressed interest in each of the 3 learning scenarios and the various demographic variables. To avoid having cells with expected counts of less than 5, "not interested" and "might be" were combined, and "interested" and "very interested" were combined. Interest in Scenario 1 (problem-based learning) was slightly more than expected for respondents between 31 and 41 years old, and less than expected for respondents more than 50 years old, χ^2 (3, N = 480) = 17.82, $p = .000$. Interest in Scenario 2 (computer-based training) did not differ by age as was the case for Scenario 3 (webinar).

There was almost no relationship between gender and interest in a particular e-learning scenario, although women were slightly less interested in Scenario 2 (computer-based training), χ^2 (3, N = 414) = 7.87, $p = .049$.

As with nationality, there were not a sufficient number of respondents in each occupational group to be able to run meaningful statistical tests. However, the majority (80%) of the respondents came from one of the following five occupational categories: protection, administration, programme operations, field operations or information technology. In terms of respondents from these five occupational groups: interest in the problem-based learning scenario

did not differ by occupation, χ^2 (12, N = 384) = 6.63, p = .904; interest in the CBT scenario did not differ by occupation, χ^2 (12, N = 333) = 12.87, p = .378; and interest in the Webinar scenario did not differ by occupation, χ^2 (12, N = 301) = 9.16, p = .690.

In summary, the majority of respondents were "interested" or "very interested" in all three learning scenarios. There was little difference in expressed interest based on demographic factors, although women were slightly less interested in the CBT scenario. There were too few respondents per nationality to run any meaningful statistical tests based on nationality. There was no difference in expressed interest in the e-learning scenarios for the five main occupational categories.

Lack of interest in the three e-learning scenarios. Of course, it is easy to say one is interested in studying and, in fact, there may be a component of social desirability bias in the positive responses, even though participants were assured that their responses were confidential. Given the concerns raised by several researchers regarding the high attrition rates found in distance education, it was essential to look more closely at the respondents who stated that they were not interested in the e-learning scenarios.

In total, 62 respondents indicated that they were "not interested" in at least one of the e-learning scenarios. Males comprised 46% of this group and females the remaining 54%. These participants came from 38 different countries. In this group of 62, member of the Anglo-Saxon world were less interested than expected in at least one of the scenarios

Only three participants categorically stated that they were not interested in any type of e-learning, mainly because they were not interested in learning through computers. As one

respondent put it, "Personally I need direct contacts and exchanges with my colleagues because I learn through others." Another said,

> There is no way I will undertake any learning that leaves me alone with a computer. For me, learning is about interaction, needs a live exchanging of ideas, listening and discussing with real people. This also enables a total focus/concentration on the subject at hand. Otherwise, I feel I am going back to school days at times when I was doing my homework.

In summary, with the exception of the Anglo world versus the non-Anglo Saxon world, there was no apparent relationship among the members of this group to differentiate them from the other respondents. The group was diverse in terms of age, first language, nationality and current professional area within the NGO.

Limitations, Advantages and Suggested Changes to three e-learning scenarios

Respondents were asked to note the limitations and advantages of each of the three e-learning scenarios, and to suggest changes that would make this way of delivering a course more suitable for their learning situation. Respondents were not required to answer this part of the survey. They could make comments on any, or all of the nine options. No word limit was imposed. For the most part, participants responded with short phrases, although several also gave very detailed answers. Comments that were not relevant to the questions asked were not included in the analysis.

Problem-based Learning Scenario Results

      Limitations of Scenario 1 problem-based learning. A total of 360 respondents described, from their perspective, the limitations of a problem-based learning scenario that required a dispersed geographical team to solve a problem typically encountered in their work. Twenty-eight of them (8%) indicated that there were no limitations, making comments such as, "no significant disadvantage", "as such I did not find any disadvantage of this training", "Can't think of one", and "no particular limitations". Not surprising this group was "interested" or "very interested" in this type of e-learning.

      The remaining 332 responses addressed the limitations of a problem-based learning approach in e-learning. Even when participants responded "interested" or "very interested", they still discerned limitations or disadvantages in this team based approach to solving a problem. The responses were grouped into the following themes: access barriers (91); individual learner beliefs (81); interaction (81); course design (61); and conflicting priorities (32).

      Theme 1 Access barriers: This term was chosen to describe this theme because these 91 entries reflected situations where participants were excluded or limited from full participation in e-learning. In general, these were very concrete, not easily surmountable, limitations on participation in this type of e-learning course. The most frequently mentioned limitation was associated with a lack of technical infrastructure (74), followed by language proficiency (11), time zone differences (10), and unfamiliarity with IT tools (3).

      In terms of lack of technical infrastructure internet, connectivity (63) was the most frequently cited. Respondents also mentioned hardware and software (9), electricity (1) and the high cost of phone calls (1).

As one female respondent from Finland explained:

poor technical quality of internet in some locations where we work. The "hard ware" is also often very outdated and this may discourage some staff to participate at the time they would have to invest to overcome technical challenges would simply be too much.

A male respondent from Spain also spoke about the frustration of trying to learn in situations with poor internet connectivity.

Slow internet connection in deep field areas, which can be very frustrated [sic] when doing the training as you will not be able to join some of the chats or teleconference and make [sic] the e-learning very time consuming (you need to wait for long time to load each pages).

Eleven participants cited language proficiency in English as a limitation either for themselves, or for their colleagues. As a Francophone speaker pointed out, "the majority of learning are [sic] in English, this survey also, it will be better to use French also". A Spanish speaking colleague from South America made a similar remark regarding having courses in languages other than English. Although she was very interested in learning using a problem based scenario she said that a limitation was, "Language. The courses are in English. I would like to take courses in Spanish".

Another Spanish speaker from Central America explained the problem of taking courses in English using a problem-based approach.

Most of the courses are in English, which is not the native tongue of the overwhelming majority of [ ] staff. They are designed by native English-speakers and therefore reflect a

narrow world perspective (i.e. your answer will be reviewed by some with this narrow perspective and most likely considered to be wrong). Also, they have little or no field experience and therefore are extremely theoretical. Colleagues [ ] are not used to forums, chats, etc. They are afraid that whatever they will say may be held against them. People have different ways of learning and this one may not suit all learning needs of the staff.

Ten people simply noted that there would be the challenge of working with people located in different time zones, and three participants said that some of their peers are not familiar with using such tools.

In summary, almost a third (91) of the respondents perceived that access barriers, in the form of inadequate technology, language proficiency in English – the language of training - , time zone differences, and unfamiliarity with IT tools were limitations in the use of the problem-based learning scenario for online training.

Theme 2 Individual learner beliefs: In contrast to the access barriers, this theme contained more subjective language and covered a wider spectrum of responses. The 81 entries referred to lack of engagement (26), lack of interaction (24), lack of quality (12), isolation (12), and differing cultural perspectives (7).

Nearly a third (26) of the entries referred to a lack of engagement with the problem-based approach. A respondent from Pakistan, who was "not interested" in this scenario stated flatly, "It's boring and has no real impact on the efficiency and work output in the [NGO] system". A female Administrator from France, who had never experienced e-learning and said she "might be" interested in this scenario, described the limitations of this online problem-based learning

scenario as, "No direct contact, no human aspect and group dynamic, flat and more demanding, less challenging".

Lack of interaction also figured prominently in the responses, as 24 people made comments on this aspect. A male respondent, who had never experienced e-learning and was "not interested" in the problem-based approach explained:

I feel that only through direct interaction with a teacher/facilitator, the respective content can be taught, without "leaving out" those less equipped with the IT skills and facilities required, and providing special attention to those who aren't as quick in learning as others may be.

The lack of face to face contact typical in many computer mediated environments was seen as an impediment in this scenario. A female respondent from Australia, who had never experienced e-learning and was "interested" in learning using this scenario noted the limitations of the approach as, "Lack of face-to-face contact, devoid of body language. These seriously affect interpersonal dynamics and how people respond to situations, which would affect responses to the problem."

Several (12) respondents alluded to a lack of learning quality in e-learning, indicating that it could never be as good as face to face learning. A female administrator from South America, who had previously taken two courses online explained:

To me, the quality of live/ in person communication can never be replaced by IT one (even if it is "chat" for instance). Discussions and exchange of opinions can never be as lively as the "real" ones. Since it takes time, you also have to wait for reply from your tutor for instance, etc.

The feeling of isolation that often occurs in distance education was also seen by 12 respondents as a limitation in the problem-based learning scenario. A male Administrator from Italy, who was "very interested" in learning with the problem-based scenario, nevertheless noted that a limitation of this approach as, "perhaps the feeling of belonging to a class". Other respondents used terms such as "alone", "impersonal", "not to be part of a group" when describing the limitations.

Seven respondents referred to differing cultural perspectives limiting the scenario. A respondent from Tanzania, who worked in Field Management and was "very interested" in the problem-based learning scenario noted that, "Cultural diversities may limit scope of solutions as members of the group tend to invoke their cultural preferences first". This sentiment was echoed more strongly by an experienced e-learner from Thailand, who was less interested in this scenario. She said, "My comment is that there is likely a cultural and practice issue in different working location. It might be difficult to learn or obtain any fruitful outcome".

In summary, a quarter of the respondents (81) perceived the problem-based learning scenario as lacking in learner engagement, in 'real' interaction, and in quality of learning. There was also the impression of isolation, and concern that cultural diversity would hamper the global team in arriving at a resolution to the problem scenario.

Theme 3 Interaction: This code was named interaction because that was the term most often used by the respondents. There were 81 entries listing interaction as a limitation in the problem-based learning scenario. Almost one third (24) of the respondents specifically mentioned that there was no interaction with a trainer and/or fellow learners. A young female

Hungarian administrator, who had never taken any e-learning courses, but was "very interested" in all three scenarios described a limitation of this design as follows:

> Personal contact is missing. Some issues might be easier to explain if the trainer is there in person. Some people in the group, who might not feel so comfortable with chat, e-mail, forum, might not participate that actively, especially if other participants do so.

A further 24 respondents made comments related to the characteristics of electronic communication. Many of them referred to the lack of visual cues and used the term "face to face". One German speaker explained the limitation of this scenario as, "technical in nature, i.e. how clearly can I communicate with others electronically. It would help to see others when chatting, in order to humanize the process; otherwise it may be a little sterile". A female Kenyan administrator also wanted to see her fellow learners. She described the limitation of this e-learning design as:

> Impersonal nature of the programme. Often times, face to face or personal interaction with fellow participants in a programme is more fulfilling because then you get to see the people that are contributing. It also provides a forum to improve on communication skills by observing others.

Nine of respondents pointed out that there would be a delay in getting feedback. "I cannot give or get feedback instantly" noted a Malaysian respondent. As a Thai respondent explained, "questions cannot be asked immediately. It can cause misunderstanding or students may get stuck when they have questions". Three of the respondents felt that there was no mechanism for asking questions.

Some of the respondents specifically referred to lack of interaction with a tutor. However, 21 of the respondents simply made comments such as "lacks interaction" or "little interaction" without elaborating, so we do not know exactly what they mean.

In summary, a quarter of the respondents (81) specifically listed inadequate interaction as a limitation of the problem-based learning scenario. In particular, they felt it was missing interaction with a facilitator. The lack of face to face contact was a limitation because visual cues were missing, and it would be more difficult to build a team. The asynchronous nature of the problem-based learning scenario also meant that there would be a delay in receiving feedback.

Theme 4 (PBL) Course design: There were 61 entries listing an aspect of course design as a limitation of the problem-based scenario. The largest group of entries was related to teamwork (34), followed by course content (21) and course organization (8).

A few of the teamwork comments could be interpreted as also being applicable to teams that meet face to face, such as, "That one or a few people might end up doing the work on behalf of everyone, with many doing very little". However, most of the comments suggested difficulties that are more likely to be experienced by virtual teams. For example, an Egyptian administrator noted that "there might be miscommunication occurring between the dispersed team". A respondent from the United States, who was less interested in the online problem-based learning scenario, explained the limitations of this approach as follows, "Maintaining regular communication with a spread out group, developing a good relationship with them. They might not participate either. It is unlike most situations in real life".

The inclusion of a real-world problem in the course content was seen by 21 respondents as a limitation. A female German, employed in External Relations and "very interested" in this

approach to e-learning noted, "Real-world problems may limit the scope of learning, i.e. it might be difficult to learn completely new things this way". A female respondent from Sri Lanka who was also "very interested" in learning using a problem-based approach noted that, "Of course, there might be country specific problems which are not common to all and different political influences by various governments could have limitations".

A few respondents had concerns about the organization of a course structured around a problem-based learning approach. For example, a female Administrator from Ireland, who was less interested in this scenario, saw the following limitations:

> getting things up and running. Who takes the initiative to organise the remote forums, discussions, etc. This is much more difficult if there has never been an initial meeting or if the people have never met - if there's no guidance on this from the course organisers. When you factor in workloads, time zones, cultural issues it could hamper the effective working of the learning group.

Three respondents observed that there was no provision to practice within the problem-based course organization. A female respondent from Afghanistan working in community services, who had no previous experience with e-learning but was interested in learning using this scenario, stated, "There is gap/ limitation of no practice during the learning process. There should be practicing mechanism in order to memorize some important points or subjects".

Finally, a Danish female, who was "very interested", in all three scenarios and had previous experience in e-learning summed up the limitations of the problem-based scenario as follows:

that it requires electricity and internet connections. It should be clear the roles and responsibilities among the team members, if there is a team leader, if there should be any reporting lines. There should probably be some kind of facilitator of the process as people can have very different interpretations of the information provided and a lot of time can go discussing this which of course can be seen as part of the exercise. It should also be clear what it is that is supposed to be learnt in such an exercise e.g. is it to learn how to work in a team? Is it to learn how to actual solve the problem? Is to learn how to acquire knowledge through e-learning? Or is it all? If so, it should be clearly stated.

In summary, 61 respondents viewed the problem-based learning course design as a limitation of the problem-based learning scenario. In particular, working as part of a virtual team raised concern. The respondents wondered if the course content, in the form of a real-world problem, would be suitable for a global body of learners. Finally, the loose organization of a problem-based learning course was seen as a limitation for busy, diverse, dispersed learners.

Theme 5 Conflicting priorities: There were 32 entries referring to the problem of managing their workload and finding time to study online. A respondent from Ghana, who was less interested in online problem-based learning, explained, "Balancing time for learning sessions amidst heavy work schedule for some staff might be difficult". A respondent from Germany, who was interested in this learning scenario, observed, "Difficult to set time aside for learning and even more so if it is on the computer". Several respondents also mentioned that finding "uninterrupted time" during the day for study was a challenge. A respondent from the Ukraine, who was very interested in online problem-based learning, summed it up as follows:

The only problem might be the workload in the office :) as it is very difficult to have a

learning session when there are lots of competing priorities in your work place. If you are

not in a workshop or training people very seldom respect the 2 hours that are allocated for

the learning per week. And if there is a need to organise an on-line discussion time

difference between the offices can become one [limitation].

There were also 30 entries listing time as a limitation. It may be that these entries should

also be included in this theme, but the respondents only made comments such as, "time",

"limited time", " time limit", "time constraints", or "time consuming", so it was difficult to

determine if these were conflicting priorities.

Advantages of Scenario 1 problem-based learning. A total of 360 respondents

described, from their perspective, the advantages of learning using a problem-based learning

scenario that required a dispersed geographical team to solve a problem typically encountered in

their work at the NGO. Four respondents specifically said that there was no advantage to this

type of learning: "no human contact no advantage"; "from my perspective there are none";

"none" and 'no". Three respondents stated "no comment". Responses from the remaining 353

respondents were grouped into the following themes: convenience (127); availability (70);

collaboration (65); savings (61); and individual learner beliefs (46).

Theme 1 Convenience: There were 127 entries related to the theme of convenience. The

majority (82) of entries related specifically to the advantages resulting from the time flexibility

provided by the asynchronous nature of the problem-based learning scenario. The flexible timing

allowed respondents to study at a convenient time and at their own pace. As one respondent from

Canada hypothesized, "It is readily available when you have time, i.e. you can take care of

unexpected work without worrying about missing a set in stone appointment". "I can do it at my own pace which makes me comfortable", explained an Administrator from Uganda.

A further 39 respondents mentioned the advantage of time and place flexibility. As a female respondent from Malaysia succinctly noted, "I can learn at my own pace, space and time". Finally, 6 respondents simply said that the problem-based Learning approach was "convenient" or "flexible".

In summary, the convenience provided by the flexibility in time, pacing and location afforded by the problem-based learning online scenario was seen as an advantage by respondents.

Theme 2 Accessibility: There were 70 entries related to the theme of availability. In many of the comments, respondents used short phrases that included words such as "access", "available", "chance" and "opportunity". Forty-six of the comments could, in fact, be attributed to any form of e-learning, not necessarily a problem-based approach. For example, as a female respondent from Uganda working in Community Services explained, "Due to the remoteness of the settlement where I live and work, this would help me benefit even from this remote area through e-learning which otherwise would be non-existent if not for the Organization's online programs". Another respondent pointed out, "Sometimes it is the only thing possible to include everybody".

The 24 entries that referred to some aspect of Professional Development were more clearly linked to advantages of an online problem-based learning scenario. For example, a respondent from Chad, who worked in Field Office Management, said that by taking an e-learning course organized around problem-based learning he could improve the quality of his

work in the organization. A respondent from the United States, who worked in Field Safety and was very interested in taking an online problem-based learning course, explained:

> It allows you to apply your specialty knowledge to a problem that requires a multi-functional approach. It also can show that though you might have a good overall solution, weakness in one area (i.e. team member) will hurt the whole team, thus giving impetus to people to expand within their own area of competence.

In summary, respondents perceived that having a problem-based learning course online would make it more available to a wider audience, especially those who worked in remote areas. In addition, the opportunity to engage in team problem-solving was seen as valuable for professional development.

Theme 3 Collaboration: There were 65 entries citing the benefits of global collaboration as an advantage to learning using a dispersed team to solve a problem. Cross-fertilization was the most frequently cited (49), followed by encourages contact (8) and opportunity to develop teamwork skills (8).

The term cross-fertilization was chosen because several respondents used this term in their explanations. As a female respondent from Sri Lanka described it, "This is a cross fertilization kind of an exercise. We could always share our knowledge and get the best out of others as well." An experience e-learner from the Ukraine, who was "very interested" in this scenario explained the advantages. She said, "Brain fishing can help if there is a serious challenge. New tactics and ideas shared by the colleagues from other regions will be useful and can open unexpected solutions and creative approaches". Finally, a female Administrator from Malawi summed up the advantage as, "One gains more knowledge, as people of different

cultures and situated in different geographical locations, are sharing knowledge and experiences on how to resolve a problem".

Some of the eight entries that listed encourages contact may also be referring to the advantages of cross-fertilization, but they simply said, "opportunity to connect with others", "forces you to connect with your colleagues", or "encouraging communication". Two respondents referred to the opportunity to get to know other people, which seemed to indicate more of a social aspect. One respondent referred to the social and cross-fertilization aspect of the problem-based approach, "Good opportunity to communicate with colleagues outside of the office, share views, hear about other's work conditions and learn from each other".

Finally, eight respondents saw an advantage of problem-based learning as an opportunity to develop teamwork skills. A female respondent from Sweden, who was interested in learning using this approached, stated, "You learn how to work better as a team and you solve problems together". Although she was less interested in learning using a problem-based approach, an Administrator from Ireland did note the following advantage of the scenario as follows:

It will leave lots of freedom for the learners to organise themselves as they choose. When people communicate in a free and natural manner, they contribute to analysis and problem solving in the same manner they would at work (except not involving their own supervisors and team as resources.)

In summary, respondents listed collaboration with colleagues from other offices as an advantage to the online problem-based learning scenario, using words such as "cross-fertilization" and "brain fishing". A few specifically mentioned the opportunity to develop teamwork skills in this scenario.

Theme 4 Savings: There were 61 entries listing savings as an advantage of learning using an online problem-based approach. Cost savings were the most frequently cited (47) followed by cost and time savings (7), time savings (5), and efficient (2). A participant from Ethiopia, who was "very interested" in the problem-based learning scenario listed the advantages as follows:

> That the staff will get greater degree of freedom to study at any appropriate time to suit their need of training by saving time and travel cost. This is the way of the new world quick learning system across the world […]

Many of the remaining entries tended to be brief: "cost reducing"; "saving time and travel cost"; "time saving"; "limited expenditures", and "cost effective". All of the entries in this particular category could easily be applied to any form of online learning. However, a few respondents specifically linked the cost savings to increased access. A respondent from Spain, who was "very interested" in the online Problem-based scenario described the advantage as "Reduction of cost and flexibility in timing which makes it more accessible".

In summary, respondents listed savings in terms of lower costs, and efficiency for online problem-based learning courses.

Theme 5 Learner Beliefs: These 46 entries were grouped into this category because the language was more subjective, and seemed to reflect more of a personal viewpoint. Engagement was the most frequently cited (29), followed by richness brought by diversity (13). Four of the entries indicated that while there were advantages using a problem-based learning approach, they were only applicable for certain situations.

Several respondents felt engaged in this approach because they found it "creative" and "mind challenging" and relevant to their work. As one respondent from the Netherlands

succinctly stated, "Creative, very relevant as it deals with a real situation". Respondents also appreciated the richness diversity brought to the learning experience. For example, a female respondent from the Ukraine noted that "A real-world problem has a geo location with a bundle of particular problems that require certain specific areas of knowledge/skills that some trainees are still to learn and some trainees are already experienced in". Another respondent from Germany stated that an advantage of the problem-based approach was, "Drawing on everyone's skills, experiences and perspectives. Teamwork is the best way to learn and to solve problems". The remaining four respondents mentioned advantages, but only under certain conditions. For example, one respondent from Djibouti, who was not interested in learning using a problem-based approach, allowed that this scenario might be suitable for newly recruited staff.

In summary, respondents believed the online problem-based approach to learning to be engaging. They also felt that they could learn from colleagues in other regions. A few respondents thought this approach had advantages but was only suitable under certain conditions.

Suggested changes to Scenario 1 problem-based learning: Participants were invited to suggest changes to the problem-based scenario that would make this type of e-learning more suitable for their learning situation. A total of 240 respondents made suggestions, which were relevant to e-learning using a problem-based approach. Instead of leaving the comment section blank, 15 respondents said that they were "not sure" or "don't know". As one respondent from Finland explained, "…difficult to say at this point as I would like to try one in real time first before making suggestions". A further 25 respondents made comments to the effect that they did not have any suggestions because the scenario was already suitable. For example, respondents made comments such as, "No changes, I am very comfortable with the current way", "I think the proposed is ok", "The existing options and opportunities are more than suitable" and "No

change". Answers from the remaining 200 respondents fell into the following themes: improve access (56), (PBL) course design (50), increase interaction (30), blended learning (25), and learner beliefs (16).

Theme 1 Improve access: There were 56 entries suggesting that access to the problem-based learning scenario be improved.

To address the problem of access due to technical difficulties, 17 respondents recommended using alternate delivery, such as CDs as back-up. A further 11 respondents simply suggested solving the technology problems. They made comments such as "increase the bandwidth", and "improve connection speed". "Be sure everyone has adequate technology" said a respondent from the Netherlands.

Ease of use was the sub-theme suggested by 11 respondents. They made comments such as, "ease of access", and "easy to use".

Ten respondents also suggested that language proficiency be addressed, although they had varying solutions. A female respondent who was interested in learning using a problem-based approach said, "Ensure that all staff have a minimum level of competence in computing and English". Other participants made comments such as, "For each course, we need a French version" and "Translate the courses in other languages different than English or French".

Four respondents suggested taking time zone differences into account. "To have the group be at least within the same geographical region, making the time zone differences less" advised a respondent from Brazil, who was very interested in participating in a problem-based learning scenario. Finally, three respondents advised that having support from one's supervisor,

would improve access. "There should be a learning time devoted for such purpose that has to be given to staff during the working hours" suggested a respondent from Ethiopia.

In summary, approximately half of the respondents suggested that access to the online problem-based scenario be improved by including CDs as backup and by solving the technology problems. They stressed that the technology should be easy to use, and that participants need to have proficiency in English and in computing in order to benefit from the problem-based learning training.

Theme 2 (PBL) Course design: There were 50 entries related to suggestions for improving the problem-based learning scenario. The majority of respondents referred to organization (31), teamwork (12), and content (8).

There were a wide variety of suggestions regarding the organization of a problem-based learning approach. For example, a male respondent from the United States, who was working in protection, had the following suggestion, "Approach the problem progressively, so that members have a chance to shore up their knowledge in small bites, rather than having to make great leaps. Some will be daunted by large gaps in their knowledge". A respondent from Canada, who was "very interested" in learning using online problem-based learning advised,

> - have a Skype-like component where persons can talk vs. only writing - ensure that persons working together are from time zones that will enable a mutually agreed and feasible time to work together if they need to do part of the course together; otherwise the problem should be one that can be done in steps or pieces where you don't all have to be on-line at the same time

Twelve respondents made suggestions designed to improve the teamwork aspect of the scenario. A respondent from Uganda stressed, "Sensitising all colleagues on the importance of sharing ideas and team work as a tools for effective running of the organisation". Choosing an appropriate team was also mentioned by several respondents. A respondent from Brazil suggested, "Ensure that the people have diversity but as well have had experience with the matter or are familiar in the discussed domain".

There were eight entries that referred specifically to the course content. One respondent advised choosing the issue wisely. Several respondents suggested the use of lots of examples. In particular, a female respondent from Germany, who was working in protection, counselled using "concrete examples" from the NGO operation.

In summary, there were a variety of suggestions for improving the organization of the course to account for working with a busy, diverse, dispersed group, such as including a Skype component, and chunking the course material. Respondents also encouraged training in working with a diverse virtual team. Finally, the course content should be relevant with lots of concrete examples.

Theme 3 Increase interaction: There were 30 entries that suggested ways in which interaction could be increased: more use of communication tools (13), involvement of a facilitator (13) and five respondents simply suggested incorporating more interaction into the problem-based learning scenario.

Thirteen respondents suggested using communication tools such as videoconferencing, Skype, chat rooms and bulletin boards. A respondent from the United States, who was less interested in the problem-based learning scenario suggested, "Set times for gathering the group

via Skype or another form where people can be seen/heard would encourage more of a team spirit and would seem more like the real world".

Eleven of the respondents wanted some sort of facilitator/coach/tutor/guide/moderator to be part of the course. A respondent from Japan, who was less interested in the problem-based approach, explained, "As the team dynamics would very much depend on who are in the team, occasional interventions and involvements by the trainers would be suggested".

Finally, five of the respondents simply stated that they wanted "more interaction" or "enhanced interaction".

In summary, respondents recommended increasing interaction with other learners in the problem-based learning scenario by making more use of communication tools, such as Skype, chat rooms, and bulletin boards. Respondents also recommended the introduction of a facilitator or moderator, who would interact and guide the rest of the team members.

Theme 4 Blended learning: There were 25 entries that related to using some form of blended learning, as opposed to a course that was conducted completely online. Respondents proposed having some form of face to face contact at some point during the course. A little over half (14) of the respondents made specific suggestions as to the timing of the face to face suggestions. The majority advised the addition of a workshop at the end of the course. As one respondent from Serbia and Montenegro reasoned, "It would be useful to always organize gathering of participants in the final stage of the course, so experiences and opinions can be exchanged". One respondent said that a workshop could be held at the end or at the beginning. Finally, a young female respondent from Canada, who was working in Emergency Management, recommended, "Having an initial session, either in person or via video conference where

participants could meet each other 'face-to-face' in order to establish better "team" feeling among learners." The remaining 11 entries made more general comments such as, "have e-learning but also include face-face to interactions such as workshops".

In summary, respondents wanted part of the course to be held face to face with the majority suggesting that there be a face to face workshop at some point in the course.

Theme 5 Learner beliefs: Of the 16 respondents, almost half of them did not suggest changes because they did not see problem-based e-learning as viable option, or they vastly preferred face to face workshops. A respondent from the United States opined, "I think this one would have to be a real rather than a virtual course to be truly effective or interesting". A female respondent from France stated, "No e-learning; I need seminars and workshops". A male respondent from Sri Lanka affirmed that, "It is far better to have workshops or to send out trainers to facilitate local groups". This group tended to be not interested, or less interested in this scenario.

A respondent from Eritrea, who was interested in the problem-based learning approach advised, "The learning should be both e-learning and interactive as the later help learners to share experience among each other and it also increases their confidence". The remaining 4 respondents made varied comments such as, "Less focus on chats, forums etc. and clearly defined responsibilities per participant" and "make it interesting".

In summary, half of these respondents did not see an online problem-based learning course as feasible, or they saw it as a poor substitute for face to face workshops. Other respondents recommended making it more engaging and making participant responsibilities clear.

Summary of themes for problem-based learning limitations, advantages and suggested changes. Table 4 summarizes the results by frequency of response

Table 4

Themes for problem-based learning scenario by frequency of response

Limitations	Advantages	Changes
Access barriers (91)	Convenience (127)	Improve access (56)
Learner beliefs (81)	Availability (70)	PBL course design (50)
Interaction (81)	Collaboration (65)	Increase interaction (30)
PBL course design (61)	Savings (61)	Blended learning (25)
Conflicting priorities (32)	Learner beliefs (46)	Learner beliefs (16)
None (28)	None (4)	None (25)

Computer-based Training Scenario Results

Limitations of Scenario 2 computer-based training. A total of 275 respondents described, from their perspective, the limitations of learning through computer-based training where one works alone at a computer. Nineteen of them (7%) specifically indicated that there were no limitations, making comments such as, "nothing", "none", and "no limitations". Not surprising this group was "interested" or "very interesting" in this type of e-learning.

Responses related to the limitations of standalone computer-based learning were grouped into the following themes: interaction (75); learner beliefs (71); access barriers (36); CBT course design (27); and conflicting priorities (19).

Theme 1 Interaction: Almost a third (22) of the respondents pointed out that lack of feedback was a limitation of the computer-based training scenario. Some respondents characterized the situation simply as "unable to get feedback", or "there is no feedback". Others were more precise, noting that there was "no real feedback" or "lack of personalised feedback". As a respondent from Norway pointed out, "feedback is not targeted but calculated with no room for discussion".

The lack of opportunity to discuss ideas with others was referred to as a "lack of cross fertilization". A further 22 respondents listed lack of cross fertilization as a limitation of computer-based training. A respondent from Costa Rica, who was "very interested" in learning using computer-based learning, nonetheless pointed out that, "You may not be able to bounce ideas back with other colleagues who may be more experienced than you on the subject, and from whom to learn". Another respondent, who indicated that she "might be interested" in learning this way stated, "Wonder whether working on one's own, like above, gives enough opportunities to pick up the larger context within which an issue needs to be studied".

Twelve respondents simply made comments that the Computer-based scenario was "not interactive", "no interaction", or "lack of interaction" without any elaboration. A further 11 used the words "human" or "face to face" when stating that there was little interaction. Finally, eight respondents used the word "alone" or "isolation". A male from Sweden, who was less interested

in Computer-based training, summed up the limitation as follows, "Studying alone when we never work alone? No doesn't take advantage of team work for team solutions = synergies".

In summary, respondents saw the lack of interaction as a limitation of the CBT learning scenario. They felt that there would not be any cross-fertilization of ideas with other colleagues. Furthermore, the feedback in this type of learning was limited and not personalised. Respondents referred to the lack of human contact and working alone as limitations.

Theme 2 Learner beliefs: These 71 entries were grouped into this theme because the language was more subjective, and seemed to reflect more of a personal viewpoint. The respondents thought that the disadvantages of the Computer-Based Training scenario were lack of engagement (35), lack of interaction (23), and CBT course design (13).

Half of the respondents (35) cited lack of engagement as a limitation of the computer-based learning scenario. A female respondent from Ghana, who was interested in learning this way, nevertheless noted, "It's easy to cheat! There is no competition. Competition creates an urge to do better, read more and try your best". A female respondent from the United Kingdom, who was less interested in this scenario explained its limitation as, "Quite boring, hard to feel engaged and to plough on through (in my experience) but of course that will depend on how done".

A further 23 respondents stated that the lack of interaction was a limitation in the computer-based learning. A male respondent from the United States, who was "very interested" in computer-based learning, noted, "If you don't learn well on your own (or if the material is not very clear), this could be difficult". A female respondent from Germany, who was less interested in the computer-based learning scenario, explained:

It's hard to motivate yourself working all alone. The computer judging progress presumes that it's all about yes/no answers, which might be good when you have to learn certain rules by heart, but otherwise the important learning experience that comes from interacting with people is lost.

Four of the 23 respondents tied the limited interaction to a lack of quality. For example, a female respondent from Austria said, "Interaction with others increases quality of training".

Several respondents (13) saw the course design as limited. Some referred to the computer as "dumb". A female respondent from Spain, who worked in Archives and Records, stated that the computer-based learning scenario, "Will only work for technical content. If solutions are not always black and white, but grey, computer may not have enough intelligence to evaluate me".

In summary, respondents felt that the Computer-Based Training scenario was not very engaging. The lack of interaction with others means that this scenario is more suitable for those who like to work on their own. Finally, respondents questioned a course design that used "dumb" computers to evaluate their answers.

Theme 3 Access barriers: This term was chosen to describe this theme because these situations where participants were excluded or limited from full participation in e-learning. The main limitation to participation in Computer-based training was access to a reliable, adequate Internet connection. Of the 36 entries, 33 referred to Internet access, or Internet and electricity or specific equipment. One female respondent from Hungary, who was less interested in this Computer-based training, pointed out, "In places where the speed of the internet is low this can be a difficult, time consuming exercise". Two people warned against assuming that learners possessed certain pre-requisites, such as IT (Information Technology) skills and "the necessary

skills to look for information to be able to benefit fully from the e-learning course". One respondent from Myanmar merely said, "Technical difficulties". Finally, 5 respondents cited "language" – presumably proficiency in English - as a limitation.

In summary, respondents thought that the Computer-Based Training scenario was limited in cases where the technology infrastructure, especially Internet access, was inadequate. Respondents also cited interruptions at the workplace as a limitation to this scenario.

Theme 4 (CBT) course design: There were 27 entries listing an aspect of course design as a limitation of the computer-based learning scenario. Respondents noted difficulties with finding suitable course content (15), and with the course organization (12).

A female administrator from Thailand, who was "very interested" in learning using the computer-based learning approach, nonetheless warned, "Sometimes the simulation/situation does not reflect the real situation of each person. What participants learnt, may not be useful if it does not reflect the situation they are in." A male respondent from Nepal, who was also interested in this approach, echoed this warning. He explained the difficulty in forming appropriate questions for this scenario, "Sometimes the answer may not be as expected by the participant since the situation/culture at his/her station may be different".

Twelve respondents noted difficulties in organizing a course that deals with a real life challenge by working through a sequence of questions. A male respondent from Canada, who was less interested in this scenario, made the point that "This approach has no particular advantage over a hard-copy approach. In some circumstances, the hard-copy approach may be more 'portable'". A male respondent from the United States, who was working in Information Technology and also less interested in learning using computer-based training, advised that, "The

course syllabus would have to be very carefully written in order to best exploit the use of the computer as medium of instruction (as opposed to a teacher-led course). Expectations from learners will also have to be adjusted". Finally, four of the 12 respondents specifically mentioned that sustained reading from a computer screen is hard on the eyes.

In summary, respondents saw the Computer-Based Training course design as a limitation of this scenario because of the difficulties in devising a relevant real-life challenge with appropriate questions.

Theme 5 Conflicting priorities: There were 14 entries listing conflicting priorities as a limitation. A respondent from Uganda, who worked in Secretarial Services and was less interested in the computer-based training scenario, noted a limitation of this scenario as, "It requires time to study and of course with competing operational demands". A female Administrator from Peru, who was less interested in this type of learning noted, "If you do this while you are at work you might get interrupted with calls, colleagues needing assistance, etc." Another Administrator from Nepal, who was, in contrast, "very interested" in this type of learning thought that one might not be able to devote sufficient time to the course "due to other priories". A further 11 respondents made comments such as "time", "time consuming", and "lack of time", which may belong in conflicting priorities, but without any context, it is difficult to make this determination.

Advantages of Scenario 2 computer-based training. A total of 294 respondents described, from their perspective, the advantages of learning using a computer-based training scenario. Five respondents specifically said that there was no advantage to type of learning: "none"; "no advantage"; and 'no". Two respondents said that they "don't know". Responses

from the remaining 287 were grouped into the following themes: learner beliefs (40),

convenience (34), accessibility (32), course design (29) and savings (18).

Theme 1 Learner beliefs: These 40 entries were grouped into this theme because the

language was more subjective, and seemed to reflect more of a personal viewpoint. The

respondents thought that the advantages of the Computer-Based Training scenario were

effectiveness (16), closely followed by engagement (15), and finally reduced stress (9).

The 16 respondents thought this scenario was effective for a variety of reasons. A male

respondent from Moldova, who was "very interested" in learning through a computer-based

scenario outlined the many benefits as, "Allows for individual time management; promotes self-

discipline; available to a wider audience; does require minimum support; the fastest way of self-

development/ to get/test knowledge in various areas of interest". A respondent from Hungary,

who was less interested in this scenario, still felt that the computer-based training was an

effective way to learn and retain knowledge. She explained:

> You start exploring the topic on your own; you make the research, therefore making
>
> efforts to find answers. The information acquired in this way will remain longer in your
>
> mind and you do not tend to forget it after passing the exam.

Several respondents (15) found the Computer-Based Training scenario to be engaging

because they liked working on their own, found the scenario challenging, and liked being judged

by the computer because a computer is "neutral, emotionless and deals only with yes and no

answers". A male respondent, who was "very interested" in learning this way said, "You work

at your own pace, plus learn for yourself, which in the end may be rewarding in itself". A female

respondent from Kenya, who was personally less interested in learning through the computer-

based scenario, still described the advantage of this scenario as, "A challenge that is interesting and keeps one hooked to the training".

Finally, nine respondents expressly mentioned that this scenario was less stressful and put one more at ease. A male respondent from the Congo explained as follows:

The advantage is that the learner can decide by himself on the time of work and how he wants it to be and there is no stress. But the forum of chat is a bit stressful because you have to arrange for the time which cannot always match others.

A female respondent from Macedonia found the Computer-Based Training scenario less stressful because, "I can test myself without being ashamed of failure, I can adjust the learning pace according to my time schedule".

In summary, respondents believed that the Computer-Based Training Scenario was an effective way to learn. They also found it engaging because they were working for themselves. Finally they thought that working on their own, in a Computer-Based Training Scenario would be less stressful.

Theme 2 Convenience: There were 34 entries related to the theme of convenience. Respondents saw advantages in the flexibility, especially for time and working at one's own pace afforded by the computer-based training, which made studying more convenient. A male respondent from Ghana, who was less interested in this scenario, still noted that there were benefits in terms of, "Flexibility of time, and ability to pace the course according to one's own timetable".

Some respondents made more general comments about the computer-based learning scenario, such as, "it will ease life", "it is quick and efficient", and "very easy to carry on in all situations".

In summary, respondents found the Computer-based Training approach to be convenient. They appreciated working on their own, and at their own pace.

Theme 3 Accessibility: There were 32 entries related to the theme of accessibility. Many respondents (17) saw the computer-based learning as providing more opportunities for learning, or as a female Administrator from Brazil described it, "extended learning opportunities". A male respondent from Italy explained, "These types of courses can reach all". Other respondents noted that for, "Those who are working in remote area, this is best way to improve themselves".

Fifteen respondents alluded to the Computer-Based learning as opportunity specifically for professional development. As a male respondent from Myanmar, who was "very interested" in taking a course that used this approach, said that it was, "very effective and very useful for the staff who want to upgrade their skills and knowledge".

In summary, several respondents saw the advantage of the Computer-based Training scenario as its accessibility especially for those working in remote areas.

Theme 4 (CBT) Course design: There were 29 entries related to the theme of course design. The majority of entries referred to the advantages of autonomy, i.e. not being dependent on others. A female respondent from China explained the advantage of working alone as, "We will not need to count on others for feedback and we can get the study going". Another respondent from the Netherlands, who worked in Executive support also mentioned, "Working in isolation is also an advantage, as you are not dependent on colleagues to finish an assignment

successfully". A few respondents thought that the autonomy built into the computer-based learning course design would help them to become more independent learners. As a female Administrator from Ghana explained, "It helps me to become an independent learner and forces me to identify the skills I need to effectively benefit from e-learning, that is, to have a relative comfortable knowledge of the use of information and communication technologies".

The content of the course was advantageous in the opinion of six respondents. A female respondent from Jordon appreciated, "The availability of different sources of information in order to have a better understanding of the challenge at hand". Finally, a further six respondents noted the relatively quick feedback afforded by the computer. A female respondent from Ethiopia, who was working in the Budget department noted, "The course is excellent to have an overview of certain subjects and evaluate oneself".

In summary, several respondents saw the CBT course design as advantageous because of the autonomy it provided. They also appreciated the opportunity for quick feedback afforded by the Computer-based Training program.

Theme 5 Savings: There were 18 entries listing savings as an advantage of learning using a computer-based learning scenario. The term "savings" was chosen because most respondents used this word. Almost all (16) referred to cost savings, and 2 respondents referred to time savings. Respondents used terms such as, "no cost", "less expensive", "cheap", "time and cost efficiency". One of the longer comments was from a female Administrator from Malawi. She said, "It is cheaper. The study material is provided".

In summary, some respondents saw the advantage of the Computer-based training to be cost and time savings.

Suggested changes to Scenario 2 computer-based training. Participants were invited to suggest changes to the computer-based training scenario that would make this type of e-learning more suitable for their learning situation. A total of 241 respondents made suggestions, which were relevant to e-learning using a computer-based training approach. Instead of leaving the comment section blank, 9 respondents said that they were "not sure" or "don't know". As one respondent from Finland explained, "…difficult to say at this point as I would like to try one in real time first before making suggestions". A further 45 respondents made comments to the effect that they did not have any suggestions because the scenario was already suitable. For example, respondents made comments such as, "no change", "no suggestion", "more courses please" and "So far so good, no particular changes I can think of". Answers from the remaining 188 respondents fell into the following themes: CBT course design (54), improve access (26), increase interaction (26), learner beliefs (22) and blended learning (11).

Theme 1 (CBT) Course design: There were 71 suggestions for improving the course design of the Scenario 2 Computer-Based Training course: presence of a facilitator (41), course organization (24), and course content (6).

There were 41 responses that specifically asked for some sort of facilitator to be involved in the course. As a male respondent from Ghana, who was less interested in this learning scenario, pointed out, "There is the need for a facilitator to complement the work of the computer as the computer will not foresee all the challenges that students might face". A respondent from Thailand, who was also less interested in this scenario, suggested, "Being guided by the organizer or trainer one by one instead of searching by own given the time frame for those who are busy in the field work" . Another respondent from the Congo, who responded that he was interested in computer-based training still advised, "To have opportunity to have someone to ask

questions and have CD for training at home mostly for week end". In particular, a few respondents wanted a "real person" to evaluate their answers. A female respondent from the United Kingdom added, "Perhaps incorporate a tutor to assist the 'judging' part".

The 24 suggestions for improving the course organization varied. A few referred to the course length. A female respondent from the Netherlands, who worked in Field Office Management advised, "The course should be split up in small parts that can be handled in a rather short time frame". A male respondent from Bangladesh was more specific. He said, "Each courses should be divided into part-A, part-B, etc. each completing in 15 minutes". Several participants used the word "structured" in their suggestions. A female respondent from South Africa, who was "very interested" in the computer-based training scenario, suggested that there be, "Well-structured content and interactive exercises to facilitate the practical application of the knowledge". While a female Administrator from Ethiopia, who was less interested in the computer-based training scenario, recommended that there be a, "Time frame to complete the learning process in a structured manner and with a firm commitment that could be assessed".

The 6 comments related to course content also varied. Three respondents felt that the content must be relevant to the learner. For example, a female respondent from Argentina, who was "very interested" in CBT opined that the challenge, "Must be adapted to the place where the person is doing the course". Another respondent, who worked in Community Services stated, "Case studies should be delivered or given according to real life because of variety in geographical and sociocultural aspects". A female respondent from Tanzania, advised, "It should be a clear scenario otherwise the learners might end up responding to issues which are not relevant". Others said to "limit sources of information" and "include key tips on how to search better for information".

In summary, respondents suggested that a facilitator somehow be involved in the Computer-based Training. They also recommended chunking the course, and making the course content relevant to the learners.

Theme 2 Improve access: There were 26 entries or varying strategies for improving access to the CBT course: improve technology (13), take language into account (5), support from supervisor (4), and make it easy to use (4).

To address the problem of access due to technical difficulties, 13 respondents recommended using CDs or USBs as back- up, and for reference, and solving the technology problems. A female respondent from Canada, who worked in Information Technology, had the following suggestion:

> -if you have technical difficulties to always have a 24x7 helpdesk available - should ensure that a prerequisite "getting ready course" is taken by learners to ensure the computer will function as needed for the real course - should provide free shareware as applicable, to enable the course to be taken without technical issues.

Five respondents suggested taking language into account when developing courses. Respondents from Algeria and Burundi, who were both "very interested" in this CBT scenario asked for a French version. Another respondent from the Congo, who was also "very interested", simply suggested that if the NGO "can do its best to translate training in other language than English it will help more".

In summary, respondents felt that access barriers to the Computer-based Training course could be reduced by improving the technology, including CDs or USBs as backup, and translating the course into other languages.

Theme 3 Learner beliefs: There were 22 entries containing a wide range of suggestions. The majority were ideas for making the computer-based training scenario more engaging. A female respondent from the Ukraine, who was less interested in computer-based learning, gave the following suggestion with an explanation:

> Give information that will otherwise not be accessible to me easily. Otherwise, in such training you often feel you learn what you already knew, just systematising the knowledge. Such training shall be more practical than theoretical to make it interesting for the user. Perhaps there shall also be an element of a tutor introduced.

A few respondents simply made comments such as, "add a creative element", "more personalized, and "make it more interesting".

Five respondents pointed out that they did not care for computer-based training. A respondent from Thailand, who worked in Information Technology and was less interested in the computer-based training scenario said, "Ideally, I would prefer some regular off-the-job training". Another respondent from Central America, who was "not interested", asserted, "On-the-job training and better coaching on the part of managers is 100% time better than the type of training proposed". A male respondent from France, who was "not interested' in the computer-based training scenario stated, "Keep human as the center of all interest and forget about computer".

Two respondents suggested the use of media to make the CBT scenario more engaging. A female respondent from Belgium suggested, "Use recorded webinar for technical fields, better than having to read again new policy, documents, etc." while a male Administrator from Australia advised, "Where possible convert some programmes into podcast or audiobooks".

In summary, some respondents recommending trying to make the Computer-based Training scenario more engaging for learners. A few respondents felt that this scenario was simply not a desirable way to learn.

Theme 4 Blended learning: Eleven respondents suggested changing the stand alone CBT to include some sort of face to face component, i.e. blended learning. A female respondent from the Netherlands, who was less interested in learning using computer-based training suggested, "Combine part of the e-learning with a workshop to put the main elements into practice along with other participants". Similarly, a female respondent from Greece, who was interested in this scenario, said, "Combine part of the e-learning with a workshop to put the main elements into practice along with other participants". Some respondents suggested having a workshop at the end of the CBT course, while others proposed a mixture of computer-based training and face to face learning.

In summary, a few respondents suggested adding a face to face component to the Computer-based Training.

Theme 5 Increase interaction: There were 8 suggestions for improving interaction in the CBT scenario. Eight of the respondents proposed more interaction with other learners who were taking the course. A male respondent from Costa Rica, who was "very interested" in the CBT scenario suggested, "Although it may be good to do the test, or take questions individually, perhaps it is good to have a group of colleagues studying similar subjects, so that we have a virtual discussion of the matter, etc." A female respondent from Canada was less interested in this learning scenario, but made a similar suggestion, "Provide some sort of chat or forum where participants taking the same independent study course can exchange ideas".

In summary, some respondents suggested increasing the interaction in the Computer-based Training by introducing a discussion facility, and study groups.

Summary of themes for CBT limitations, advantages and suggested changes. Table 5 summarizes the results by frequency of response

Table 5

Themes for computer-based training scenario by frequency of response

Limitations	Advantages	Changes
interaction (75)	learner beliefs (40)	CBT course design (71)
learner beliefs (71)	convenience (34)	improve access (26)
access barriers (43)	accessibility (32)	learner beliefs (22)
CBT course design (27)	course design (29)	blended learning (11)
Conflicting priorities (14)	savings (18)	increase interaction (8)
None (19)	None (5)	None (45)

Webinar Learning Scenario Results

Limitations of Scenario 3 webinar (virtual classroom). There were 280 participants who responded to this part of the survey. Of this group 18 responded that there were no limitations. They made comments such as, "none", "no disadvantage", and "no disadvantage – best option". The majority of this group was, not surprisingly, interested in learning using webinars.

The remaining 262 responses addressed perceived limitations of a Webinar scenario. The responses were grouped into the following themes: access barriers (136); course design (45); learner beliefs (28); and interaction (19).

Theme: 1 Access barrier. There were 136 entries related to barriers to participation in a webinar based course. The most frequently mentioned limitation was lack of adequate technical infrastructure (96) followed by time zone differences (43), and language proficiency in English (6).

In terms of lack of technical infrastructure, inadequate internet connections were frequently mentioned. A respondent from the Congo, who was less interested in a webinar approach, noted, "This is feasible in developed countries, in most of African countries, it may not work because of technology problems". His colleague in Tanzania asked, "Is this program possible for staff like us who are working in the remote area with uncertainty in network and electrical connection?" A female respondent from Hungary, who was interested in learning with a webinar based approach, described some of the limitations of this scenario as follows:

> Possible low speed of the internet or lack of technical facilities. The quality of the picture and voice can be [so] poor that would make the participant concentrate on understanding what the lecturer is talking but not give enough opportunity for understanding the content. Even if the technical background is given and functioning properly, it can be hard for those whose English is not the mother tongue to follow the lecturer`s speed.

 A female respondent from China, who was "not interested" in webinar based learning, noted, "We need to bear in mind that staff worldwide are not just concentrated in an European time zone. It is difficult to find a time zone which suits all". A respondent from Bosnia and

Herzegovina echoed this sentiment. She noted, "Not flexible, time bound with a trainer, which due to time differences could be inconvenient times". The time zone difference was also often mentioned as an exacerbating disadvantage in concert with other access barriers. For example, a respondent from Canada, who was "very interested" in webinar based learning, said, "learners may not have the required technologies - the course could be given at a time when it's not convenient for persons outside the local area of the instructor".

In summary, respondents found the requirement for an adequate technological infrastructure to be a major limitation of a webinar based learning scenario. The large number of time zones among the dispersed body of learners was also seen as a barrier to participation in the webinars.

Theme 2: (Webinar) Course design. There were 45 entries listing course design as a limitation of the webinar based scenario. All the entries referred to the synchronous nature of webinars. For example, a female Administrator from Botswana, who was less interested in this scenario, explained, "There is no flexibility as you have got to avail yourself at the agreed time". In addition to the loss of flexibility, respondents were also concerned about missing classes. A female respondent from Ghana, who was "very interested" in learning with a webinar based approached noted the following limitation, "If you are on mission you miss out on sessions ".

In summary, the synchronous nature of the webinar based approach reduced the flexibility that was so appreciated in some of the other scenarios.

Theme 3: Learner beliefs. There were 28 entries listing personal perspectives on the limitations of a webinar based approach to learning. The majority were related to lack of engagement with this scenario. Respondents used words such as "uncomfortable", "boring",

"awkward", and "impersonal". Several respondents simply did not like the idea of participating in a webinar or videoconference. A respondent from Denmark, who indicated that he was less interested in a webinar scenario, stated, "I do not like video/teleconferences. It is hard to keep the concentration up". A female respondent from Germany, who worked in External Relations and was interested in learning using a webinar, approach explained more fully:

> Many people do not like videoconferences or teleconferences or electronic chats and may not benefit from this type of interaction very much. Hard to find the time to do this if you work in a duty station like HQ [Headquarters] where you don't have privacy in your office to do a VC [videoconference] and have your family at home so don't really have quiet time there either.

A few participants noted that inadequate technology might make it more difficult to remain engaged during a webinar session. A male respondent from Central America, who was "not interested" in learning using webinars, warned why this approach would not be engaging for himself and for his colleagues:

> I went through a similar system during my secondary school (pre-taped TV lessons followed by a Q&A session). I do not think it is a very efficient way to learn. Also, it puts at a big disadvantage colleagues working in remote duty stations where connectivity is poor. You will most likely discourage them more, when technological constraints (including poor telephone connection) makes it difficult to understand what is being said (not to mention the fact that the trainer will probably only speak English).

Finally, three respondents noted that the course would have to be very carefully designed because of the webinar technology. A female Administrator from Hungary, who was "not

interested" in learning using a webinar-based approach flatly stated that it was, "too complicated to organize it as everyone need to be in front of the computer at the same time". Even a female respondent from the Philippines, who was "very interested" in learning through a webinar based approach, warned:

> Sometimes technology has its own limitations. This needs to be fully considered in the design of this kind of program. It's one thing to see one another in real time as if you're together in a classroom. It's another to hear and understand each participant in person.

In summary, several respondents expressed discomfort with the idea of learning using a webinar based approach.

Theme 4: Interaction. There were 19 entries related to what was perceived as limited interaction. Respondents noted that the trainer could not see all the learners and could not fully interact with them as in a face to face situation. A female respondent from the United States said, "Teacher cannot see the students - attitude, facial expressions, etc. - so cannot adjust; many students will not speak up". A male respondent from Thailand, who was less interested in learning through a webinar based approach, explained, "Not fully interactive between trainer and the trainee. With the conference facility that we have these days, the trainer cannot monitor and interact with every single participants".

In summary, a few respondents thought the webinar based learning scenario still lacked interaction.

Advantages of Scenario 3 webinar. A total of 254 respondents described, from their perspective, the advantages of learning using webinars. Four respondents thought that there was no advantage to this type of learning. Three respondents said, "Don't know", "no input", or "not

comment". Responses from the remaining 247 respondents were grouped into the following themes: interaction (134); learner beliefs (66); savings (22), and accessibility (18).

Theme: 1 Interaction. This theme was named interaction because that was the term used most often by the respondents. There were 134 entries citing interaction in a webinar based learning scenario. Almost half (65) of the respondents stated that an advantage of this scenario was the opportunity to interact with a trainer and/or other learners. A male respondent from Myanmar, who was interested in webinar based learning, stated, "Very good approach. Learners can discuss things with others and shoot questions to facilitator at once. Learners can learn from one another by sharing". Forty-one respondents specifically mentioned the opportunity to interact with a trainer was an advantage. A respondent from the Congo, who was less interested in the webinar approach, nevertheless noted, "The fact that you can see and listen to the teacher, ask and answer questions may be an advantage".

There were 44 respondents who appreciated the opportunity for timely feedback afforded by the webinar based approach. A female respondent from Macedonia noted, "There is a personal contact and I can get detailed answers to my questions". Twenty-nine of the respondents simply make short comments such as "interactive" or "very good opportunity for interaction". Finally, 12 respondents thought a webinar was the best alternative to face to face classroom learning. For example, a respondent from the United Kingdom said, "Closest to a real classroom environment with real time facilitation". His colleague from Italy added "Mimics more a classroom environment and a closer relation between learners and trainer".

In summary, respondents thought that the advantage of the webinar based learning scenario was the interaction with a trainer, and the possibility of receiving timely and targeted feedback.

Theme 2: Learner beliefs. There were 66 entries related to individual learner beliefs regarding the advantages of a webinar based approach to learning ranging from it being a more effective program to it being a way to break the isolation of e-learning.

Several respondents used terms such as "more effective in delivering the information", "better explanation since it is from the Trainer", and "giving more knowledge". Other respondents thought that the webinar based learning approach would help them to complete a course. For example, a male respondent from Portugal, who was interested in this scenario," explained the advantage as, "The training is structured, the trainees are motivated because they have to be on time at their desk to participate and organized interaction with others is possible". His colleague from the Congo felt that being connected with a trainer "will push the learners to fully follow the program". Finally, a female respondent from Ghana, who was interested in a webinar based approach to learning, stated that it, "Would allow more face-to-face interaction between learners and tutors, breaking the isolation of e-learning that it sometimes creates". Her colleague from Togo, who was "very interested" in webinar based learning, elaborated, "You feel like you are connected to the world. You are not left aside or alone to deal with your own challenges. You feel like being part of a Team focused on the same challenges".

In summary, several respondents thought the webinar-based learning scenario was a more effective teaching method and alleviated the feeling of isolation often experienced by distance learners.

Theme 3: Savings. There were 22 entries related to savings; 16 respondents referred to costs and the others to efficiency and saving time from not travelling. A female administrator from Papua New Guinea noted, "Saves money compared to attending actual training missions"; while a female respondent from Croatia, who was also interested in webinar based learning, described the advantages as "Interactive learning, saving costs on travel and accommodation".

In summary a few respondents noted the advantage of cost savings for a webinar based approach as opposed to face to face training.

Theme 4: Accessibility. There were 18 entries related to the theme of availability. A female respondent from Hungary noted, "In spite of the distance one can be part of a course". Another respondent from Canada, who worked in Information Technology and was "very interested" in a webinar based course explained:

> You have an instructor available to answer questions immediately, and you get the social aspect of learning without physically going anywhere - good for learning that might not be available in your own location - good for types of classes where international input would be valued.

In summary, a few respondents felt that the webinar based approach would make courses more accessible to more people.

Suggested changes to Scenario 3 webinar. A total of 123 respondents made suggestions, which were relevant to learning using a webinar based approach. Instead of leaving the comment section blank, 13 respondents said that they were "not sure" or "don't know". A further 34 respondents made comments to the effect that they did not have any suggestions because the scenario was already suitable. For example, respondents made comments such as,

"no changes", "nothing to suggest", and "I do not have any suggestion, it is good method". A Telecommunications specialist from Tanzania, who was 'very interested' in this approach urged, "continue to nourish this method of delivering the course for better understanding of the learners". Answers from the remaining 76 respondents fell into the following themes: improve access (54); individual learner beliefs (27); increase interaction (7); and blended learning (5).

Theme 1: Improve access. There were 54 entries suggesting that access to the webinar scenario be improved. The most frequently cited suggestions referred to improving the technology, followed by recording the webinar sessions, flexible timing for the webinar and assignments, and finally ensuring language and IT skills are adequate.

There were an array of suggestions associated with improving the technology infrastructure such as internet connectivity, adequate hardware and software, and compatibility with a variety of Web browsers and Macintosh computers. A female respondent from Australia, who was working in Executive Support and "very interested" in a webinar based approach, explained, "Ensure tech equipment is state of the art, so that lost time and frustration from poor quality video/sound, signal, time lags etc. are avoided, ensuring better overall quality of training delivery".

Eleven respondents suggested recording the webinar lectures, not only to deal with technical difficulties, but also for learners who were absent, or who simply wanted to review the material. A male Administrator from Egypt, who was "very interested" in a webinar based approach, advised, "have a recorded video of the session so that whoever wants to return for a certain detail or information or those who were unable to attend the discussion and the lecture can have access over and over again". Ten respondents had suggestions for dealing with the time

zone problems, such as having the trainer in the same time zone, broadcasting the lecture at a variety of times, or broadcasting the lecture three times during a day. A female Administrator from Thailand, who was less interested in webinar based learning, proposed that, "Classes should be organised according to time zone, e.g. class for Asia Region, Europe time zone, etc."

In summary, respondents suggested that the technology infrastructure would have to be improved for more people to be able to take advantage of a webinar based approach to learning. They also suggested that time zone differences needed to be taking into account by having multiple broadcasts, or recorded the webinar sessions.

Theme 2: Learner beliefs. There were 27 entries containing a wide variety of suggestions for improving the webinar based learning scenario.

Six of the respondents suggested that this scenario should not be used at all. A female respondent from China stated, "I really doubt the effectiveness of such course". A participant from the United States, who worked in Staff Development and was less interested in webinar-based learning, suggested, "Think up innovative exercises/challenges to keep participants involved and engaged during the lesson. Make the presenter use lots of video and visuals". A female Administrator from Kosovo, who was "very interested" in a webinar based approach, observed, "at times they [webinars] are too long (up to 2 hours) and participants may lose interest by the end".

On the other hand, a few respondents made comments such as "More and more courses to be delivered by e-learning", and "Organisation should encourage this for all staff".

Finally, a few respondents noted that a webinar based approach is very dependent on the facilitator, so they suggested training for the facilitator.

In summary, there was a wide range of personal viewpoints. A few respondents stated that they preferred face to face training over a webinar based approach while others were more enthusiastic.

Theme 3: Increase interaction. There were seven entries suggesting ways in which interaction could be increased in the webinar scenario. Four respondents suggested that interaction with the trainer could be increased for example by devising "a means of follow up to questions that come later". Two respondents recommended that the class size be kept small, "to enable the trainer attend to all of them". Finally, one respondent recommended including a chat system.

In summary, only a few respondents suggested increasing the interaction in the webinar based approach.

Theme 4: Blended learning. There were five entries suggested that workshops be combined with the webinars. One respondent suggested that the workshop be given at the completion of the webinar course, while three respondents recommended interspersing webinars with workshops. A female respondent from Denmark, who was interested in learning through webinars, suggested that, "It might be coupled with face-to-face workshops at critical stages throughout the course". An Administrator from France had a similar suggestion. She said, "Combine both theoretical learning through computer and then a one day meeting with group exercises". Finally, a respondent from Macedonia, who was "very interested" in learning via webinars, simply said, "Organize workshops".

In summary, only a few respondents suggested that workshops be combined with the webinar based learning approach.

Summary of themes for webinar limitations, advantages and suggested changes.

Table 6 summarizes the results by frequency of response.

Table 6

Themes for webinar-based learning scenario by frequency of response

Limitations	Advantages	Changes
Access barrier (136)	Interaction (134)	Improve access (54)
Webinar course design (45)	Learner beliefs (66)	Learner beliefs (27)
Learner beliefs (28)	Savings (22)	Increase interaction (7)
Interaction (19)	Accessibility (18)	Blended learning (5)
none (18)	None (4)	None (34)

Comparison of the three e-learning scenarios

Limitations. There were 378 responses listing the limitations of the problem-based learning scenario, 242 responses listing the limitations of the computer-based training scenario, and 246 responses listing the limitations of the webinar-based scenario.

See Figure 1, for the themes of access, conflicting priorities, course design, lacks interaction, learner beliefs, and none as a percentage of the total response for the scenario.

Overall, the webinar scenario was perceived to have the most barriers to access. Lack of interaction was the greatest limitation of the computer-based training scenario. The computer

based scenario also evoked the strongest opinions. The synchronous nature of the webinar scenario was limitation of this course design. Finally, although many respondents liked the collaboration aspect of problem-based learning, managing the teamwork aspect was seen as a weakness in the course design.
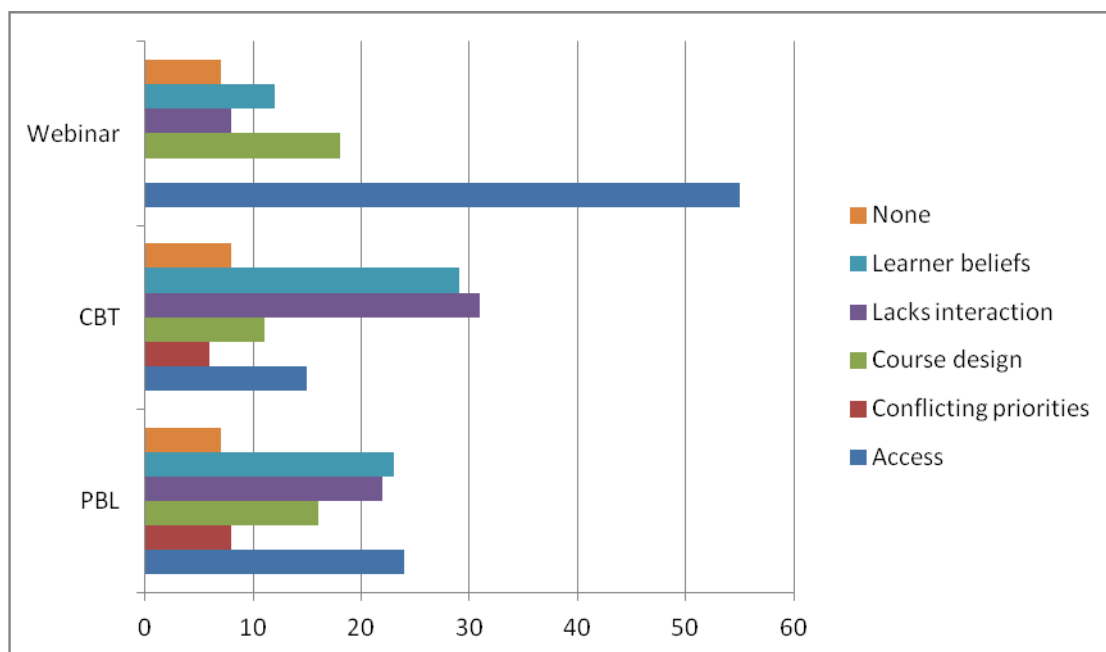

Figure 1 Limitation themes by percentage of responses per scenario

Advantages. There were 373 responses listing the advantages of the problem-based learning scenario, 158 responses listing the advantages of the computer-based training scenario, and 244 responses listing the advantages of the webinar-based scenario.

See Figure 2, for the themes of accessibility, collaboration, convenience, course design, interaction, learner beliefs, savings and none as a percentage of the total response for the scenario.

Overall, the webinar-based scenario was perceived to have the most interaction, and the problem-based scenario was convenient and allowed for collaboration.
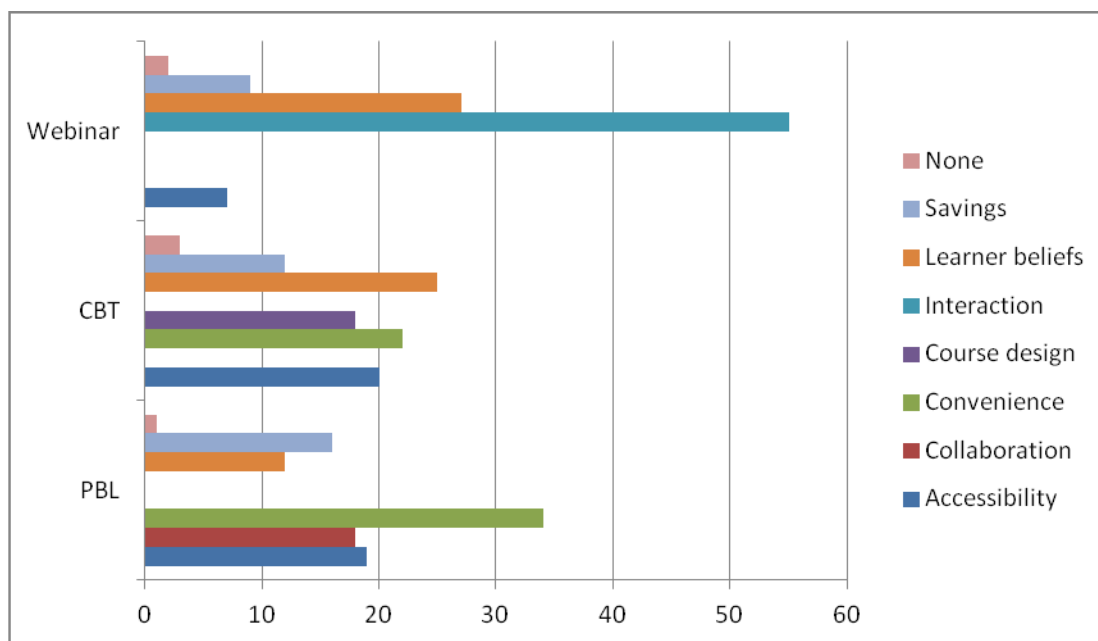

Figure 2 Advantage themes by percentage of responses per scenario

Suggested changes. There were 177 responses suggesting changes to the problem-based learning scenario, 139 responses suggesting changes to the computer-based training scenario, and 93 responses suggesting changes to the webinar-based scenario.

See Figure 3, for the themes of blended learning, course design, improve access, increase interaction, learner beliefs and none. Many respondents thought that access to the problem-based learning scenario and the webinar scenario should be improved by improving the technical infrastructure. They suggested the inclusion of a facilitator in the course design of the problem-based scenario and the computer-based training scenario. Almost a quarter of the respondents had no suggestions for improving the webinar scenario, or the computer-based training scenario.
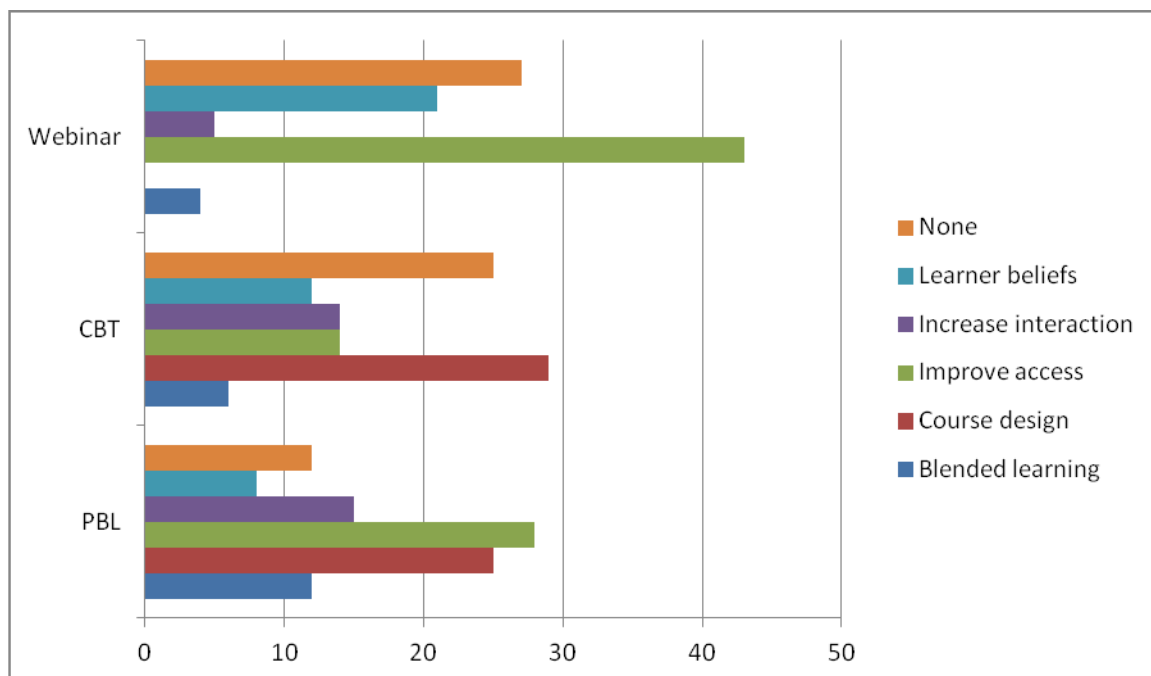
Figure 3 Suggestion themes by percentage of responses per scenario

Cultural and linguistic differences as difficulties and opportunities

Variations in interest in the three e-learning scenarios. There appeared to be no statistically significant relationships between native and non-native speakers of English and expressed interest in any of the 3 learning scenarios when running a Chi-square test, but two cells had an expected count less than five. When "not interested" and "might be" responses were combined into a "not interested" score, and "interested" and "very interested" responses were combined into "interested" score: native speakers of English were less interested than expected in the Problem-based learning scenario, χ^2 (2, N = 480) = 8.78, *p* = .012.

Not surprising, there was also a difference in expressed interest between respondents from the Anglo-Saxon World (Australia, Canada, New Zealand, English-speaking South Africa,

the U.K. and the U.S.A.) and the non-Anglo-Saxon World for the Problem-based Learning scenario. The group from Anglo-Saxon World was not identical to the native speakers of English group because some of the respondents listed a language other than English as their mother tongue. Respondents from the Anglo-Saxon world were less interested than expected, and respondents from the non-Anglo-Saxon world were more interested than expected χ^2 (3, N = 480) = 14.72, p = .002 in the online problem-based scenario. A male respondent from New Zealand who works in Information Technology felt that, "it would be cumbersome to work this way". His fellow countrywomen said it would be, "too time consuming". On the other hand, a respondent from Malawi, who was interested in online Problem-based learning, stated, "One gains more knowledge as people of different cultures and situated in different geographical locations are sharing knowledge and experiences on how to resolve a problem".

As mentioned earlier, with such a diverse group there were too few respondents per individual country to run any meaningful statistical tests based on nationality. However, by grouping respondents into the Anglo-Saxon world, Africa, Asia, Europe, and South America, and combining answers into "not interested" (not interested or might be) and "interested" (interested or very interested) a few patterns did appear that seemed worth further investigation. Participants from the African countries were significantly more interested than expected in all three learning scenarios. For the Problem-based learning scenario, 92% of them were interested, χ^2 (4, N = 471) = 29.34, p = .000. For the computer based training scenario, 82% were interested, χ^2 (4, N = 408) = 15.1, p = .004. Finally, for the webinar scenario, 86% were interested, χ^2 (4, N = 358) = 11.08, p = .026.

When asked to describe the limitations of the 3 different learning scenarios, respondents from the African countries often left the comment box empty, or stated "none", "nothing",

"non", "no significant disadvantage" or as one respondent put it, "I do not think that it has any disadvantage as long as the staff member can access the program". Indeed the most often stated disadvantages for all scenarios related to access barriers such as lack of a good technical infrastructure. One respondent from Kenya stated, "Depending on where one is located, connectivity may pose a great challenge to interested learners". Another respondent from the Congo noted, "When the connection is not good, one is bound to spend much time using computer, which will have a negative consequence on other tasks". Lack of time because they were busy at work was also mentioned as a limitation by several other African respondents. However, one respondent explained that because they were so busy, "this way is better".

In addition to their general interest in the three learning scenarios, respondents from the African countries often mentioned the advantages of availability and savings. For example, one participant from Uganda stated, "Due to the remoteness of the settlement where I live and work, this would help me benefit from the remote area through e learning which otherwise would be non-existent if not for the [...] online programs". However, while many of the participants appreciated the opportunities afforded by e-learning, they were also pragmatic. As another participant from Uganda pointed out, "It is quick and good because I can study online and it is efficient although it requires commitment and time in addition to our work".

In summary, native speakers of English were less interested in the Problem-based learning scenario than expected. Respondents from the Anglo-Saxon world were also less interested than expected in the Problem-based Scenario, and respondents from the non-Anglo-Saxon world were more interested than expected. Respondents from the African countries were more interested than expected in all three learning scenarios.

Attitudes towards learning that may be culturally influenced. Respondents were asked to indicate their level of agreement with the statement, "Silence in a training situation indicates a respectful attitude towards the instructor/trainer". The respondents were split almost evenly between disagreeing and agreeing with the statement, with 51% disagreeing and 49% agreeing. As one respondent, who only used the comment box explained, "Difficult question, it depends on the setting of the training: when a lecturer gives a lesson, one should respect her/him AND the other participants by not disturbing the presentation. However, in a different setting it would be appropriate to interact, by commenting and asking questions".

When asked if they believed they could learn from their peers, 91% of the respondents "agreed" or "strongly agreed" that they could. Respondents from the Anglo-Saxon world agreed slightly more than expected with this statement, χ^2 (3, N = 384) = 8.07, p = .045.

A total of 92% of the respondents "agreed" or "strongly agreed" with the statement, "I like to have self-tests to see how much I have learned". One of the few respondents to disagree explained, "Disagree as I chose myself what I need to learn, remember and apply".

A total of 93% of the respondents "agreed" or "strongly agreed" that training materials should contain examples of multiple cultural perspectives. A native English speaker who had agreed with this statement added the following clarification, "If it is relevant. Often it is, sometimes it is not". A female respondent from Ghana, who disagreed with this statement, replied that, "It does not matter to me if a single perspective is used". A respondent from who strongly agreed with the statement noted, "Most examples usually given are based on Africa, which is completely non-applicable to Serbia, for instance".

Respondents were asked to indicate their level of agreement with the statement, "I feel at a disadvantage if I can communicate with the instructor/trainer and other learners using only written words (chat, email, etc.)". Slightly more than half (53%) of the respondents "disagreed" or "strongly disagreed" with this statement while 47% "agreed" or "strongly agreed" that they felt at a disadvantage.

A total of 81.5% of the respondents "agreed" or "strongly agreed" that students were responsible for their own learning. However, several respondents added that it should be a shared responsibility among learner, instructor, and management.

Finally, when respondents were asked if they preferred to keep their identity online anonymous, use a pseudonym, or use their real name, responses by gender approached statistical significance. Therefore, anonymous and pseudonym responses were combined into one category. A total of 22% of respondents preferred not to use their own name. Comparisons between using one's real name and not using one's real name online showed that women preferred not to use their real name more than expected, while men preferred to use their real name more than expected, χ^2 (1, N = 384) = 5.22, p = .015. Only a few respondents made comments to clarify their answers. One male respondent said, "Of course you should use your own name". Another male respondent stated, "Why a pseudonym? We are doing this for learning purposes (this is not AA!!!)". A female respondent explained, "It depends on the situation. Probably to remain anonymous".

Linguistic challenges faced by not native speakers of English. Participants who were not native speakers of English were asked an additional five questions. Approximately 300 participants responded to this part of the survey. They had to indicate their agreement with

statements that explored the challenge of studying in a second or even third language using a 4 point Likert scale (strongly disagree, disagree, agree, strongly agree). Although they were forced to select a negative or positive position, there was also an option to include comments. However, very few of them added comments in this section. In general there were statistically significant correlations among the five language questions related to having training courses in one's mother tongue or having a component in one's mother tongue, and preference for written or oral communication.

Prefer courses in one's mother tongue. A quarter of these participants agreed or strongly agreed with the statement "I prefer to take courses in my mother tongue". As one participant explained, "taking courses in my mother tongue is the best way for me to well understand". However, as mentioned earlier, it was a forced choice question and a few who had "agreed" or "disagreed" with the statement noted in the comments section that in fact depending on the circumstances, it could be in English rather than their mother tongue. For example, one participant said, "in reality I don't mind, sometimes easier in English depending on the subject". A Russian speaker who had disagreed with the statement added that "it depends on the subject and audience".

People strongly disagreed with this statement for a variety of reasons. One Yoruba speaker stated, "Though English is not my mother tongue, I have received all education in English and therefore am more comfortable learning in English than my mother tongue". Whereas a Ewe speaker, who had also strongly disagreed, pointed out that his mother tongue is not included in the list of common languages. Several other participants from other uncommon language groups also said that the training may as well be in English because that is their

working language. A few were more emphatic and said that in fact the training should be in English because English is the international language.

     Summary in one's mother tongue before English material is presented. There was a strong correlation between a preference for taking a course in one's mother tongue and reading a summary in one's mother tongue before the written/spoken material is presented in English, r =.759, p = .000. A quarter of the respondents "agreed" or "strongly agreed" with the statement "I prefer to read a summary of the material in my mother tongue before the written/spoken material is presented in English", but none of them explained why this was preferable. On the other hand, the 75% who had "disagreed" or "strongly disagreed" made comments such as, "no need" or "I prefer English".

     Audio component available in mother tongue. Similarly, there was a strong correlation between preferring a course in one's mother tongue and having an audio component in one's mother tongue or a language other than English, r =.759, p =.000; although only 20% "agreed" or "strongly agreed" with the statement, "When there is an audio component explaining some aspect of the course, I want it to be in my mother tongue or a language other than English". Only a few respondents made comments. For example, one noted that, "It's a very good way of practicing in the language that is not your mother tongue". Another said, "Sometimes, if very complex to be sure I understand correctly". However, one respondent disagreed stating that, "Some technical terms are difficult to understand when translated to my mother tongue". Some people disagreed strongly because they felt that "there will be loss of context/content in translation" while others reiterated that they prefer to keep the audio component in English. Finally, a few said that it didn't really matter as long as it was in a language that they understood.

Prefer to take courses in English. Not surprisingly, there was a negative correlation between preferring to take a course in one's mother tongue and preferring to take a course in English, $r = -.351$, $p = .000$. However, several participants said it didn't really matter as long as it was in a language that they understood. One respondent said "it depends on the subject" while another stated, "it's the common language anyway and most of the terminology is in English". Four of the 21 respondents who had made comments, specifically said that they preferred to take courses taught in French or English. One respondent said, "For French speaking people, in French is better".

Interact through a keyboard. Finally, when participants were asked if they preferred to interact with the teacher and other students through typing on a keyboard, the responses were equally divided between disagree and agree. However, of the 19 comments, most stated that it did not matter, or that both typing on a keyboard and speaking on the telephone should be available. There were small statistically significant correlations with the mother tongue statements. "In an online course that takes place in real-time I prefer to interact with the teacher and other students through typing on a keyboard, e.g. email, chat, discussion forum instead of speaking, e.g. telephone, Skype, etc." and; "I prefer to take courses in my mother tongue" were significantly correlated, $r = .144$, $p < .05$. There was a significant correlation with "I prefer to read a summary of the material in my mother tongue before the written/spoken material is present in English" $r = .162$, $p < .01$. Finally, there was a significant correlation with "when there is an audio component explaining some aspect of the course, I want it to be in my mother tongue or a language other than English" $r = .138$, $p < .05$. There was no correlation with the "I prefer courses in English" statement.

Table 7 indicates the level of agreement with the five statements, expressed in percentages. Approximately a quarter of the non-native speakers would like to have courses in their mother tongue, have a summary of the material in their mother tongue, or have any audio component of a course in their mother tongue. A total of 78% prefer to have training courses conducted in English. Finally, half of the respondents prefer to interact through a keyboard.

Table 7

Non-native speaker questions (answers in percentages)

Question	Strongly disagree	Disagree	Agree	Strongly Agree
Courses in mother tongue	20	55	19	6
Summary in mother tongue	21	54	20	5
Prefer courses in English	5	17	51	27
Audio component in mother tongue	20	60	15	5
Prefer to interact through keyboard	8	42	41	9

As can be seen in Table 8, there is a strong relationship between wanting to take a course in one's mother tongue, and having at least a component of a course that is conducted in English in their mother tongue. The negative relationship between preferring a course in one's mother tongue and one in English is significant, but less strong. Finally, there is a small, but statistically significant, relationship between a preference for having at least part of a course in one's mother tongue and a preference for interacting with the teacher and other participants using a keyboard rather than a telephone.

In summary, while 78% of the respondents said that they preferred courses in English, 25% preferred to have courses in their mother tongue. Some respondents noted that as their mother tongue was not a commonly spoken language, this was not feasible. Therefore, they wanted the course to be in a language they understood, usually English or French. Respondents who preferred courses in their mother tongue also tended to prefer that some aspect of the course be in their mother tongue, such as a summary or an audio component. Finally, there is a small, but statistically significant, relationship between a preference for having at least part of a course in one's mother tongue and a preference for interacting with the teacher and other participants using a keyboard rather than a telephone.

Table 8

Correlations among responses from non-native speakers

	Course in mother tongue	Summary in mother tongue	Course in English	Audio component
Prefer summary in mother tongue	.759**			
Prefer courses in English	-.351**	-.322**		
Audio component in mother tongue	.643**	.655**	-.369**	
Use keyboard instead of telephone	.144*	.162**	.003	.138 *

Note. *p < .01, **p < .001

Von Till–Stull Questionnaire on the theoretical dimensions of culture

The Von Till–Stull Attitude Survey is a questionnaire designed to measure Hofstede's (1980, 2005) national dimensions of *power distance, uncertainty avoidance, individualism* and *masculinity*. Table 9 presents the reliability summary of scales used to measure these theoretical cultural dimensions.

Reliability index. Cronbach's alpha for the 40 items on the Von Till-Stull attitude survey was .784. One hundred and seventy-four of 538 cases were excluded because of missing data.

Table 9

Cronbach's alpha from SPSS output

Scales	Number of items	Cronbach's alpha
Collectivism	5	.504
Individualism	5	.257
High Uncertainty Avoidance	5	.592
Low Uncertainty Avoidance	5	.394
High Power Distance	5	.530
Low Power Distance	5	.400
Masculinity	5	.461
Femininity	5	.279

All of the subscales were examined to see if deleting any of the items would improve Cronbach's alpha. The results are shown in table 10. Question 13 was removed from the Individualism scale to increase Cronbach's alpha from .257 to .277. Question 12 was removed from the Femininity scale to increase Cronbach's alpha from .279 to .338. There were no statistically significant relationships found between interest in the three e-learning scenarios and scores in individualism, low uncertainty avoidance, and low power distance.

Table 10

Item analysis from SPSS output

Scales	Cronbach's alpha	Highest Cronbach's alpha if one item removed
Collectivism	.504	.505
Individualism	.257	.277
High Uncertainty Avoidance	.592	.601
Low Uncertainty Avoidance	.394	.441
High Power Distance	.530	.504
Low Power Distance	.400	.367
Masculinity	.461	.471
Femininity	.279	.338

Theoretical dimensions and interest in the e-learning scenarios. Respondents who scored higher on the Collectivism scale tended to be less interested in all three e-learning scenarios: Problem-based learning scenario, $r = .197$, $p = .000$; the Computer-based training scenario $r = .197$, $p = .000$; and Webinar, $r = .186$, $p = .001$.

Respondents who scored higher on the Uncertainty Avoidance index tended to be less interested in both the Problem-based learning scenario, $r = .197, p = .000$ and the Computer-based training scenario $r = .127, p = .017$.

Respondents who scored higher on the Power Distance index tended to be less interested in both the Problem-based learning scenario, $r = .116, p = .027$ and the Computer-based training scenario $r = .125, p = .019$.

Respondents who scored higher on the Femininity index tended to be less interested in both the Problem-based learning scenario, $r = .114, p = .006$ and the Computer-based training scenario $r = .130, p = .014$.

Theoretical dimensions and views on learning. Respondents who scored higher on the Collectivism scale tended to agree with the statement, "Silence in a training situation indicates a respectful attitude towards the instructor/trainer", $r = .157, p = .003$. Conversely, they tended to disagree with the statement, "I believe I can learn from my peers", $r = .141, p = .007$.

Similarly, respondents who scored higher on the Uncertainty Avoidance index tended to agree with the statement, "Silence in a training situation indicates a respectful attitude towards the instructor/trainer", r $= .209, p = .000$. They too tended to disagree with the statement, "I believe I can learn from my peers", $r = .226, p = .000$.

Respondents who scored higher on the Power Distance Index also tended to agree with the statement, "Silence in a training situation indicates a respectful attitude towards the instructor/trainer", $r = .174, p = .001$. They too tended to disagree with the statement, "I believe I can learn from my peers", $r = .263, p = .000$. Finally, they tended to prefer to remain anonymous or use a pseudonym when online, $r = .104, p = .047$.

Finally, respondents who scored higher on the Masculinity scale tended to disagree with the statement, "I believe I can learn from my peers", $r = .213$, $p = .000$. Respondents who scored higher on the Femininity scale tended to agree with the statement, "Silence in a training situation indicates a respectful attitude towards the instructor/trainer", $r = .165$, $p = .002$. Table 11 shows the significant correlations of cultural dimensions with beliefs about silence, learning from peers and preference for anonymity online.

Table 11

Correlations of cultural dimensions with attitudes towards learning questions

	Silence respectful	Learn from peers	Identity online
Collectivism	.157**	-.141**	
Uncertainty avoidance	.209**	-.226**	
Power distance	.174**	-.263**	-.104*
Masculinity		-.213**	
Femininity	.165**		

Note. *p < .01, **p < .001

In summary, according the results of the Von Till-Stull Attitude survey, respondents who scored high in collectivism, uncertainty avoidance or power distance scale tended to be: less interested in the Problem-based learning and computer-based training scenarios; tended to agree with the statement that silence in a training situation indicated a respectful attitude towards the trainer; and less likely to agree that they could learn from their peers.

Summary

In summary, a total of 538 participants of a multinational non-governmental office (NGO) responded to the online survey investigating cultural challenges experienced by global e-learners. They came from a wide variety of countries and language families. Half of them identified themselves as nationals of African, Asian, or South American countries. Less than a quarter of them had English, the language of training, as a mother tongue; but many indicated that English was a working language for them. The majority (80%) of the respondents came from one of the following five occupational categories: protection, administration, programme operations, field operations or information technology. Finally, most respondents felt comfortable using computers and had some experience studying using a learning management system.

Overall, respondents expressed interest in taking courses under any of the three scenarios: problem-based learning, computer-based training and webinars. There was little difference in expressed interest based on demographic factors, although women were slightly less interested in the computer-based training scenario.

The themes that emerged from an analysis of the qualitative data are listed in order of frequency in the following paragraphs. The term "learner beliefs" refers to comments that were very subjective, used emotional language, or appeared to be very individual opinions.

For the problem-based learning scenario, 332 responses referred to the limitations as access barriers, individual learner beliefs, interaction, course design and conflicting priorities. In particular, lack of an adequate technical structure, lack of engagement, lack of interaction, difficulties in working in teams, and difficulties in balancing study with their workload were

mentioned. A total of 360 respondents listed the advantages of the problem-based learning scenario as convenience, availability, collaboration, savings, and individual learning beliefs. Finally, the 200 responses that suggested changes to the scenario referred to improved access, course design, increase interaction, use blended learning and learner beliefs.

For the computer-based training scenario, 275 respondents referred to the limitations as interaction, access barriers, course design, and conflicting priorities. In particular, lack of feedback, little opportunity to discuss with others, and lack of engagement were mentioned. A total of 287 respondents listed the advantages as learner beliefs, convenience, accessibility, course design, and savings. Finally, the 188 responses that suggested changes to the scenario referred to course design, improve access, increase interaction, learner beliefs and blended learning.

For the webinar-based scenario, 262 respondents referred to the limitations as access barriers, course design, learner beliefs and interaction. In particular, lack of adequate technical infrastructure, time zones differences, and lack of flexibility due to the synchronous nature of the webinar design were mentioned. A total of 254 respondents listed the advantages as interaction, learner beliefs, savings and accessibility. Finally, the 76 responses that suggested changes referred to improve access, individual learner beliefs, increase interaction, and blended learning.

In terms of differences among cultural groups in expressed interest in the three e-learning scenarios, native speakers of English were less interested in the Problem-based learning scenario than expected. Respondents from the Anglo-Saxon world were also less interested than expected in the Problem-based Scenario, and respondents from the non-Anglo-Saxon world were more

interested than expected. Respondents from the African countries were more interested than expected in all three learning scenarios.

For the non-native speakers of English 78% of the respondents said that they preferred courses in English, 25% preferred to have courses in their mother tongue. Some respondents noted that as their mother tongue was not a commonly spoken language, this was not feasible. Therefore, they wanted the course to be in a language they understood, usually English or French. Respondents who preferred courses in their mother tongue also tended to prefer that some aspect of the course be in their mother tongue, such as a summary or an audio component. Finally, there is a small, but statistically significant, relationship between a preference for having at least part of a course in one's mother tongue and a preference for interacting with the teacher and other participants using a keyboard rather than a telephone.

The Von Till-Stull Attitude survey had an overall Cronbach alpha of .784, but several of the sub-scales had low Cronbach alpha scores. According the results of the Von Till-Stull Attitude survey, respondents who scored high in collectivism, uncertainty avoidance or power distance scale tended to be: less interested in the Problem-based learning and computer-based training scenarios; tended to agree with the statement that silence in a training situation indicated a respectful attitude towards the trainer; and less likely to agree that they could learn from their peers.

The next chapter will provide an overview of the entire study and a review of the findings from the statistical analysis of the data. Conclusions and limitations of the study are also discussed.

Chapter 5 Discussion

Introduction

This final chapter contains a discussion of the findings presented in Chapter Four, beginning with a review of the purpose of the study, and a review of the literature that was pertinent in developing the survey instrument for this study. This is followed by a discussion of the main findings of the study. This final chapter will present an overall analysis of the findings. Research literature will be used to support or contrast with the presented findings. Finally, suggestions for further research are given.

Summary of the study

The use of the Internet to deliver higher education and training courses is increasing, and there are a growing number of learners who are participating in e-learning courses designed and delivered by members of a cultural group other than their own on a level never before seen. This globalization of education and training leads to complexities arising from differing pedagogic and linguistic cultures and creates hidden international problems. Over the years, researchers and practitioners (Bates, 2001; Collis, 1999; Gunawardena et al., 2001; Henderson, 1996; McLoughlin, 2001) began to voice concern that the implicit values and beliefs embedded in the course design might disadvantage those learners coming from, and situated within, another culture.

Concerns that learners studying in a second or foreign language were at a disadvantage is a constant in the research literature (Bentley, Tinney & Chia, 2005; Collis, 1999: Collis & Remmers, 1997; Gunawardena, Wilson & Nolla, 2003; Pincas, 2001). Although there were expected issues such as linguistic proficiency (Goodfellow, Lea, Gonzalez & Mason, 2001;

Zhang & Kenny, 2010) and lack of proficient keyboarding skills (Tu, 2001), several authors also noted the complicated relationship between language and culture. For example, Gunawardena et al. (2003) state, "Culture influences the structure and functional use of language and that language also influences and reinforces our cultural values and worldview" (p. 759).

In addition, distance education and e-learning practices are based on the educational traditions of the Anglo/American world, which may be problematic for learners coming from another educational tradition (Goodfellow et al., 2001; Moore, Shattuck & Al-Harthi, 2006).

To complicate matters, people are simultaneously members of several cultural groups. Cultural groups are not restricted to nations. Communities and organizations also have cultures. Subject area, or disciplinary, cultures have specialised vocabulary, and a particular relation between the structure of the body of knowledge, and discourse and related structures (Becher, 1989; Donald, 2002). However, to date, there is only limited research on how these discipline differences should be incorporated into online practice (Kemp & Jones, 2007).

In terms of theories regarding cultural dimensions, Hall's (1976, 1990) low context vs. high context communication cultures dimension, and Hofstede's (1980, 2001) individualism vs. collectivism, power distance index, uncertainty avoidance index, and masculinity vs. femininity dimensions are criticized to a certain extent, but are still often used as the theoretical underpinning for studies, or as an explanation for results.

Although there has been an increasing awareness of the role and impact of culture in learning in an online environment, and some guidelines based on practice, there is little research to guide the design of culturally inclusive online environments (Wang & Reeves, 2007). A few culturally-inclusive instructional design models, such as Edmundson's (2007) CAP (Cultural

Adaptation Process) model and Wilson and Nolla's (2003) AMOEBA (Adaptive, Meaningful, Organic, Environmental-Based Architecture for Online Course Design) model, have been proposed, but to a large degree, these models are not being utilized.

In general, culturally sensitive Instructional Design is overlooked or undervalued (Henderson, 2007; Rogers, Graham & Mayes, 2007; Subramony, 2004). Furthermore, many of these guidelines and models, including the traditional ADDIE (Analyze, Design, Develop, Implement and Evaluate) model of Instructional Design, assume that the target audience is known, which frequently, is not the case, in a multinational, globally dispersed workforce. With an unpredictable learner population in global learning environments, instructional designers and trainers can rarely make overarching judgments about the demographics of learners before interacting with them.

To date, research on cultural considerations in global online learning has tended to be limited to case studies and to focus on only a few cultural groups at a time. There are only a few larger scale empirical studies with sufficient power and control of extraneous variables, to identify the effects of cultural dimensions.

Thus, the research questions that guided this dissertation include:

1. What are the characteristics of the particular challenges that global learners encounter in an online setting?

2. What are the ways that cultural and linguistic differences manifest themselves as difficulties and opportunities in global online learning environments?

3. Do current theories regarding the influence of culturally related factors in online learning cast light on research results?

Data was collected using an online survey from participants working for a large multinational NGO. The survey instrument was developed using issues and questions identified in the research literature. To counter criticisms of stereotyping survey participants by national culture, and to take into account individual differences in cultural groups, an existing instrument, the Von Till-Stull Attitude Survey, designed to measure Hofstede's (1980, 2001) four dimensions of national culture – collectivism vs. individualism, power distance, uncertainty avoidance, and masculinity vs. femininity – was included in the online survey. An invitation to participate in the study was sent by email by one of the NGO's Learning officers to all staff. Of a possible 6,000 participants, 617 people responded. A pilot study had been conducted to test the comprehensibility of the survey questions and instructions. Based on the results of the pilot study, minor modifications were made to the survey instrument.

Findings

Culture is a complex construct: difficult to define and even more difficult to measure. As illustrated by Trompenaars and Hampden-Turner's (1998) culture as an onion metaphor, it is necessary to peel away the outer layers to uncover the hidden core assumptions that influence a cultural group's norms and values. In order to tap into the implicit assumptions regarding learning, and e-learning in particular, study participants were presented with three typical e-learning scenarios; an online problem-based learning scenario, a computer-based training scenario, and a webinar based learning scenario. They were first asked to indicate their interest in taking a course organized in one of these three ways. Then, they were asked to describe the limitations and the advantages of such a learning scenario, and finally to suggest changes to the scenario that would make it more suitable for their particular learning situation.

The following section answers the first two research questions by drawing on respondents' expressed interest in and perceptions of the three e-learning scenarios. The second question is answered in more detail by examining the answers to the seven questions related to attitudes to the learning experience that may be culturally influenced, as well as the answers to the questions asked only of the non-native speakers of English. Finally, the third question, regarding the utility of theories of cultural dimensions in casting light on research results, is discussed. As culture is complex and complicated, and a large amount of data was collected in this study, the answers to the three research questions sometimes overlap in the following discussion.

Interest in the three learning scenarios. Overall, respondents expressed interest in taking e-learning courses under any of the three proposed scenarios: problem-based learning (77%), computer-based training (68%), and webinar-based learning (71%). If they were interested in taking a course under one of the e-learning scenarios, then they tended to be interested in the other two scenarios. The described computer-based training scenario is typical of courses currently offered by the NGO. However, the learning officers of the NGO are considering developing courses that use a problem-based approach. They also offer a few webinar training sessions, but they are considering expanding the number of webinar sessions. Based on the expressed interest in the e-learning scenarios, many of the respondents seem to be open to a different style of online training.

In general, there was little difference in expressed interest in the three e-learning scenarios based on demographic variables. However, respondents between 31 and 41years old were slightly more interested than expected in the problem-based scenario, presumably because they were at the stage in their career where they could benefit from working as a team to solve a

problem. On the other hand, respondents more than 50 years old were less interested than expected, which again is not surprising given the stage they were at in their career. Murphy, Gazi and Cifuentes (2007) recommend incorporating relevant activities into online courses as a useful teaching strategy to address differing worldviews. They postulate that relevance is associated with Hofstede's (1980, 2001) masculinity-femininity, uncertainty avoidance, and power distance dimensions and that the use of relevant leaning activities minimizes cultural distance. Many of the survey respondents liked the idea of studying and solving a real-world problem related to their work. A male Pashto speaker in his late twenties explained the advantage of the problem-based scenario as follows,

> One of the many advantages this type of learning has that it puts you in the center of a real-time situation that may happen and then you make a decision and act upon it which gives you much more insight than the ordinary dry teaching and learning methods where you just read about theories etc.

Finally, women were slightly less interested than expected in the computer-based learning scenario. It may be that women found this scenario, as it was described, to be less interactive. Price (2006) found that women have different interaction styles online compared with men and in the qualitative analysis of the comments, lack of interaction was more frequently mentioned as a disadvantage of the computer-based training scenario.

There were too many nationalities to run meaningful statistical tests, however, by grouping respondents by continent, it became clear that respondents from the African countries were more interested than expected in all three e-learning scenarios. They were well aware of the

limitations involved in the various scenarios, especially the dependency on an adequate technological infrastructure, but were still very interested.

This sentiment seems to be typical in the higher education sector in Africa. For example, the University of Botswana introduced WebCT in 2002 with 21 online courses. In response to repeated student requests for more online courses, by 2007 the university was delivering 450 online courses through WebCT/Blackboard (Kumar, 2008).

Lack of interest in the three e-learning scenarios. It is easy to say that one would be interested in taking a course, and indeed there might have been an element of social bias in the generally positive expression of interest. However, there was also a small group of respondents (12%) who indicated that they were not at all interested in at least one of the e-learning scenarios. This group was comprised of a variety of nationalities, age groups, and professions; thus, highlighting the admonition expressed by Hofstede (1980; 2001) that within group differences can be as great, if not greater, than between national differences.

Limitations. In a large-scale exploratory factor analysis study investigating student barriers to learning, Muilenburg and Berge (2005) found eight factors that were barriers: administrative issues; social interaction; academic skills; technical skills; learner motivation; time and support for studies; cost and access to the Internet; and technical problems. The participants in the Muilenburg and Berge (2005) study differed from this study in that they were primarily attending American universities and nearly 80% were white/non-Hispanics with the remainder including black/non-Hispanics, American Indian/Alaskan Natives and "other". Nevertheless, there is an overlap in the barriers identified in the American study and this study.

In particular, barriers limiting access to e-learning was a recurring theme for all three e-learning scenarios, as was a perceived lack of sufficient interaction. To a varying degree, depending on the e-learning scenario, the barriers included limited technological infrastructure, lack of suitable hardware and software, limited proficiency in computer skills, limited proficiency in language, and difficulties in finding time to study because of work demands. Opportunities for interaction were determined primarily by the course design of the three e-learning scenarios: a mainly asynchronous teamwork problem-based learning scenario; a work alone computer-based learning scenario; and a virtual classroom synchronous webinar-based learning scenario. The next sections discuss the themes of access, interaction and course design in more detail.

Access barriers. Some of the advantages of e-learning are its convenience, and the flexibility to provide rapid and inexpensive access to high-quality content and materials from anywhere in the world. However as Latchem (2012) points out, not everyone has ready access to a computer and Internet connection.

In 2002, Robin Mason of the Open University UK described a global course as one that is delivered on the Web, possibly with "supplementary material in other media, tutored through online interaction, probably with no face-to-face interaction, and will have students from various countries and continents taking the course simultaneously" (p. 618). She warned that the level and quality of access would be an inhibiting factor for students, and that those who were accessing the course from far away would most likely experience more technical difficulties and inferior connections.

In another study involving the UK Open University, Kirkwood and Price (2005) presented outcomes from research conducted with students from the UK Open University over the period from 1996-2002 and comprising a range of large quantitative postal surveys and smaller qualitative surveys with respondents numbering around 80,000. They reported concern that widening access to education by expanding the use of ICTs may disadvantage students with limited access to and familiarity with computers and Internet access. Both home study and work-based computer access are subject to limitations. Thus, they recommend that the quality of learners' access to ICT needs to be taken into account in designing courses. For example, they advise that there be ample opportunities for learners to work off-line.

In terms of discussions of global education, Mason (2007) describes access to education in a globalized world as the issue that arouses the most concern and debate. However, this concern is often not evident in current discussions of e-learning. For example, even in a paper that describes the challenges of online multicultural instruction and training, Parrish and Linder-VanBerschot (2010) state, "Advances in Internet technologies and applications make open and distance learning a fully viable alternative to traditional education" (p.2). Yet, as this study has shown, simple access to the Internet is still a challenge in many parts of the world, even for employees of a multinational NGO. In cases where there is Internet access, consistent connectivity, bandwidth, appropriate software and hardware, and other technical constraints were often limitations.

Access was most frequently mentioned limitation of the webinar-based scenario. Several respondents specifically mentioned limited technical infrastructure as a limitation to the webinar-based learning scenario, yet these same respondents thought that a webinar had many advantages because it was closest to a classroom situation. For example, in listing the limitation of the

webinar-based learning scenario a female respondent from Yemen, said, "Problems will arise if internet connections at the receiving end are not functioning well at the time the lecture is presented"; but the advantage is "feeling like in a classroom-like situation which encourages active participation".

Some respondents noted that the quality of transmission was especially important for the non-native speakers of English. They felt that they were already at a disadvantage because the trainer was speaking in English, and if the audio quality was poor it was another barrier for them to overcome.

Limited technical infrastructure was not the only perceived barrier to access for the webinar-based learning scenario. Unlike the other two scenarios, previous experience with e-learning courses was a factor in expressed interest. Respondents who had never taken an online course were less interested than expected in the webinar-based learning scenario, and respondents who had taken three or more online courses were more interested than expected. Online self-efficacy emerged as the strongest predictor of learner satisfaction in a study of predictors of learner satisfaction and transfer of learning in a corporate online education program conducted by Gunawardena, Linder-VanBerschot, LaPointe and Rao (2010). It may be that respondents who had never taken an online course before lacked confidence in their ability to manage the technology. Several respondents, who had never taken a course online before, listed "connection and tools" as limitations only in the case of the webinar.

The synchronous nature of the webinar-based learning scenario was perceived as a barrier because the group was dispersed over so many time zones. A respondent from China, who was not interested in the webinar-based learning scenario pointed out that the NGO staff are working

world wide and the training should not be based only on European time zones. In addition, due to

the nature of their work, many respondents were concerned that they would miss the webinar

because of being absent from the office, and thus not able to connect to the webinar, or not able

to break away from work related tasks at the scheduled time. Some respondents wanted the

webinar to be broadcast several times during the day. Alternatively several respondents

suggested that the webinar be recorded so that it could be watched at a later time. As one

respondent explained, "Ensure that the lesson is recorded so that if a session is missed, it can still

be re-played. Even though questions cannot be asked live, it is better than missing the lesson

altogether". This option was also attractive to learners who could attend the session because it

gave them the opportunity to replay the lesson several times.

In summary, the numerous comments from respondents referring to technological

barriers, time zone differences, and studying in another language, support Murphy, Gazi and

Cifuentes (2007) assertion that cultural discontinuities, or "obstacles in the cross-cultural

educational interfaces" (p. 51) resulting from technological issues negatively impact

communication in an intercultural context. They recommend the use of asynchronous

communication, simple communication systems, technical training and ongoing technical

support.

Interaction and course design. One of the primary aspects of sustaining interest in online

courses is to provide opportunities for interactions (Bhattacharya & Hartnett, 2008). In all three

e-learning scenarios, at least some of the respondents identified lack of interaction as a

limitation.

One of the tenets of problem-based learning is that learners work in a team to solve a problem; however, several of the respondents wanted an instructor to lead the team. Murphy, Gazi & Cifuentes (2007) argue that grouping learners can help reduce online cultural discontinuities related to Hofstede's (1980; 2001) individualism vs. collectivism dichotomy. However, they recommend that decisions about how groups are formed are best made prior to the group activities. Comments made by some of the respondents in describing the disadvantages of the problem-based scenario lend support to this recommendation. Respondents made comments such as, "who is responsible for coordination?", and "getting things up and running. Who takes the initiative to organise the remote forums, discussions, etc." The description of the problem-based scenario had only indicated that it was up to the learners to decide together how to analyze the problem.

Similarly, the computer-based training scenario was described as "you work alone at a computer", as this is part of the course design. Nevertheless, several respondents tried to find some way to incorporate a trainer, or some other learners into this scenario. Kinuthia (2007) suggests that in most African cultures, team participation and consensus is valued just as much if not more than individual achievement. In light of this, she argues that instructional strategies that include individualized computer-based drill and practice may be less effective, "while activities that require inquiry-based collaboration may be better received" (p.66). However, respondents encountered this scenario after the online problem-based scenario. Many of the respondents liked the idea of learning from more experienced colleagues and this may have influenced their evaluation of the limitations of the computer-based training scenario.

In their study of an multicultural group of doctoral students in education, Dillon, Wang and Tearle (2007) found that the presence of senior tutors online was important, even though

these learners were working at a high academic level, self- motivated and self-directed, "they still needed someone whom they felt had more knowledge in the subject area to lead and steer discussion" (p. 171). Although the respondents working in the NGO were to a certain degree bicultural, many of them too wanted a more knowledgeable, experienced person to be involved in the scenarios.

Finally, even with the webinar scenario, which was perceived as the most interactive of the three scenarios, there were still respondents who found that the webinar lacked interaction. In summary, respondents asked for more interaction with the trainer and with other learners for all three e-learning scenarios.

Attitudes to the learning experience that may be culturally influenced. Respondents were asked *s*even questions on learning issues that appear frequently in the research literature.

Silence in a training situation. Some researchers, such as Pincas (2001), have postulated that lack of participation in an online learning situation may in fact be due to cultural variations in the meaning of silence. Therefore, participants were asked to indicate their level of agreement with the statement, "Silence in a training situation indicates a respectful attitude towards the instructor/trainer". Respondents in this study were split almost evenly between disagreeing and agreeing with the statement, with 51% disagreeing and 49% agreeing. Given that the respondents were from 108 different countries and spoke 76 different languages perhaps it is not surprising that answers were evenly split. This dichotomy suggests that online instructors should be cautious in their interpretation of learners' silence.

Learn from peers. The majority (91%) felt that they could learn from their peers. This was reflected in the enthusiasm for collaboration in the online problem-based learning scenario

expressed by several of the respondents. They liked the idea of sharing expertise with colleagues in different offices and learning from more experienced colleagues using terms such as "brain-fishing" and "sharing best practices". However, respondents from the Anglo-Saxon world still agreed slightly more than expected with this statement. In their analysis of cultural factors on training domains, Yang, Wang and Drewry (2009) proposed that, "Trainees from a cultural of low power distance are more likely to accept peers as trainers than trainees from a culture of high power distance" (p.329). All the Anglo-Saxon countries are relatively low power in orientation to power distance. Finally, global learners, who have not yet entered the workforce, may not agree as much with this statement as the knowledgeable, skilled workers employed by an International NGO.

Like self-tests. A total of 92% agreed or strongly agreed with this statement. Given that the respondents came from a wide range of nationalities, age groups, professions, and experience with e-learning, it seems that the option to take a self-test should be included in an online course wherever possible. Of course, these self-tests need to be pedagogically sound, and provide useful feedback to the learners.

Multiple cultural perspectives. The majority (93%) of respondents agreed or strongly agreed with the statement that training materials should contain examples of multiple cultural perspectives. However, several of them who had indicated "agree" made qualifying remarks such as, "To a certain point - we shouldn't exaggerate" and "depends on the content / topic of the course". One respondent noted that, "Most examples usually given are based on Africa, which is completely non-applicable to Serbia, for instance".

In her review of instructional design paradigms, Henderson (1996) pointed out the weakness in what she referred to as the "Inclusive or Perspectives Paradigm". This model acknowledges the multicultural realities of society, but there is a risk of "soft multiculturalism" where the complex issues involved in cultural contextualisation are reduced, which could be interpreted by the learners as mere surface inclusivity. One example of soft multiculturalism is tokenism, where examples of another culture are incorporated into the design in ways that have nothing to do with the content or objective of the instructional unit. As one male respondent from this study explained,

> Caution: risk of the tail wagging the dog here. The objective of training is to impart subject knowledge. If a multicultural perspective is essential to this process, fine. But to scatter white, brown, black, yellow and green examples throughout just to make things "balanced" is just plain silly.

Comments, such as the preceding one, reinforce the admonishment not to include examples from other cultures in the instructional design merely as a surface measure (Henderson, 1996; 2007). The learning environment must find the balance among the academic or workplace culture, the mainstream culture, so as not to disadvantage learners, and minority cultures

Another possible problem that arises when interpreting this data is the differing perceptions between the learners coming from the culture of the course designers and learners from more collectivist, low uncertainty avoidance oriented cultures. For example, in a study of the perceived effects of dissonance in levels of individualism/collectivism and tolerance of ambiguity in several online courses, Tapanes, Smith and White (2009) found several differences in perceptions. In contrast to their individualist peers, the collectivist learners believed that their

individualist instructors were usually not aware of cultural differences in the online classroom and their cultural was not being taken into account in order to make learning relevant to their cultural context. Similarly, the learners from high uncertainty avoidance (ambiguity intolerant) cultures felt it is important to be informed about cultural differences that might be experienced taken a course based on a different culture, while the learners from low uncertainty avoidance cultures did not consider it important. Similarly, Chase Macfadyen, Reeder and Roche (2002) found that the greater the perception of cultural differences between online speakers, the greater the incidence of miscommunication. In some cases, the perception of differences is just as powerful as real differences. While 93% of the respondents agreed or strongly agreed with the statement that training materials should contain examples of multiple cultural perspectives, interpretations of what this means in an online training context may vary.

Disadvantaged if only written communication. A total of 47% of all respondents agreed or strongly agreed that they feel at a disadvantage if they can communicate with the trainer using only written words (chat, email, etc.). A similar question was asked of the non-native speakers and the results were evenly split between agreed and disagreed. Several authors (Dillon, Wang & Tearle, 2007; Seufert, 2002) recommend that a variety of communication tools be made available to online learners and the results from this study add weight to this design suggestion. Some studies (Dillon, Wang & Tearle, 2007; Tu, 2001) have shown that asynchronous tools are the most suitable for non-native English speakers; but some learners want immediate responses and thus opportunities should be made available for synchronous communication (Dillon, Wang & Tearle, 2007). This was demonstrated in this study where some of the respondents listed one of the disadvantages of the problem-based learning scenario as a lack immediate feedback.

Students are responsible for their own learning. A total of 81.5% agreed or strongly

agreed with the statement that students are primarily responsible for their own learning, which

means that nearly 20% felt it was the responsibility, presumably, of the trainer. So although the

majority of the respondents feel that they can learn from their peers, many of them still feel that

the trainer bears responsibility for organizing and managing their learning. This was reflected in

the concerns for managing the teamwork expressed in the online problem-learning scenario.

However, is this a cultural factor resulting from an educational tradition of teacher-centred

learning, or is it a result of a busy work schedule; thus, a dependence on someone else to make

the training time-effective?

Identity online. Participants were asked if they would prefer to remain anonymous, have

a pseudonym or use their name in an online situation. A few respondents were surprised that this

question was even posed. Of course they would use their name, they replied. However, 22% of

the respondents preferred not to use their real name. Research indicates that a sense of anonymity

can create a safe place for learner discourse. For example, issues of age, gender, race, socio-

economic background, and culture no longer determine how one's comments will be received

(Tomei, Beaufait & Lavin, 2008). In a study of Arab students studying online, the researcher

found that that the reduced assumptions associated with race and gender biases was "particularly

relieving for those who do not represent the status quo such as the participants in this study"

(Moore, Shattuck & Al-Harthi, 2006).

In another study exploring cultural perspectives on social presence and properties related

to the construct social presence in online communication from the perspective of two socio-

cultural contexts, Moroccan and Sri Lankan, Gunawardena and LaPointe, (2007) found that

"anonymity increases the ability to self-disclose and generates a heightened sense of social

presence" (p.596). Social presence has been found to be a strong predictor of learner satisfaction in the online environment (Gunawardena & Zittle, 1997; Richardson & Swan, 2003). More research is needed to determine the basis for the preference of 22% of the respondents in this study not to use their real name.

Linguistic challenges faced by non- native speakers of English

Language issues faced by learners who were not native speakers of English surfaced in several areas of the survey. However, it is very difficult to separate language and culture. Language is undeniably an important part of our cultural identification. Gunawardena, Wilson, and Nolla (2003) point out that language influences our cultural values and worldview.

In terms of language proficiency and culture, one quarter of the respondents indicated that they preferred to have courses in their mother tongue. Several researchers have found that English language competence poses a distinct barrier in online courses (Bentley, Tinney, & Chia 2005; Collis, 1999; Goodfellow et al.; Moore, Shattuck & Al-Harthi, 2006; Tu, 2001; Zhang & Kenny, 2010).

Of note, several of the respondents from African countries suggested that the training could be done in French, instead of English. Presumably for them, French was their language of education. Is this a matter of language proficiency, or is it linked to their cultural identity? Pincas (2001) argues that most learners working in an international context "need to find a balance between adapting to different social and cultural interactions in English, while maintaining a secure sense of self as a member of their national culture" (p. 42). There are approximately 2,000 African languages: two-thirds of the languages in the world. Nonetheless, African languages tend to appear on the Web more as topics of study rather than means of communication. Moreover,

the language of communication used to talk about African languages is likely to be English, even for languages in francophone regions (Fantognan, 2005).

On the other hand, many of the respondents had stated that the training may as well be in English, as it was the global language, and many of the technical terms are already in English. A few respondents had noted that while it would be nice to have training in their mother tongue, they realised that it was not feasible due to the small numbers of people speaking this language. Finally, respondents noted that it would be expensive to translate courses into other language.

Responses were equally divided between preferring to interact in real-time through a keyboard rather than speaking. Some respondents made comments such as, "both forms are fine with me", while others were more decisive. For example, an Arabic speaker stated, "I would also like to speak to express my ideas in a better way". For others, it depended on the context. "I would believe that both would be used at different times within the programme", noted a female respondent from Nigeria. Indeed, as mentioned earlier, other researchers and practitioners frequently recommend that a variety of communication tools be provided. Results from this area of the study support this assertion.

However, it should be noted that for the respondents who preferred to take a course in their mother tongue, there was a decided preference for interacting through a keyboard rather than speaking.

One proposed strategy for dealing with the increasing number of non-native English speakers studying in an English-language medium is the use of what is commonly called 'Global English'. As opposed to native English text, Global English has simpler syntax, less jargon, fewer idioms and no slang (Schell, 2007). It certainly is one alternative, for as several

respondents in this study pointed out, translation is expensive and this strategy has been

recommended by several authors (Bentley, Tinney & Chia, 2005: Schell, 2007). However, it

does not address the complicated relationship between language and cultural identity. As one

respondent in this study stated when asked if he preferred to take courses in English, "For French

speaking people, in French is better".

Theories regarding the influence of culturally related factors

This study included a previously published 40 item questionnaire (Stull & Von Till,

1994) designed to measure four of Hofstede's (1980, 2001) theoretical cultural dimensions:

individualism vs. collectivism, power distance index, uncertainty avoidance index, and

masculinity vs. femininity. Therefore, instead of assigning scores based on nationality, a score

for each of the dimensions was calculated based on individual responses.

Criticisms of Hofstede work. Ess and Sudweeks (2005) posed the question, "To what

extent are the now widely used – but also seriously criticized – frameworks for cultural analysis

provided by Hall and Hofstede fruitful for cross-cultural and intercultural communication in

CMC environments?" (¶ 1). They attempted to answer this question in a special thematic section

of the *Journal of Computer-Mediated Communication*. Based on five articles, they concluded

that, "despite well-recognized limitations, Hall and Hofstede 'work' as frameworks for

predicting an analysing intercultural communication online, although with varying degrees of

success" (Hall, Hofstede, and CMC—Applications and Contemporary Research section, para.

12). They specifically refer to two of the studies where correlations, as predicted on the basis of

Hofstede's individualism vs. collectivism and uncertainty avoidance index, "show up but in ways

that are statistically weak" (¶ 3). Their conclusion, although only based on a few research articles, is similar to what was found in the current study.

  Von Till–Stull Questionnaire on the theoretical dimensions of culture. The overall Cronbach's alpha for the 40 items was .784, but the Cronbach's alphas for the sub-scales were much lower. The decision was made to use the Von Till–Stull Survey, which contained only 40 questions in order to not overly burden survey participants with a large number of questions. Even so, a longer questionnaire may have improved the Cronbach alpha results. However, in addition, questionnaire items may not be easily transferable to a different cultural context (Reiche & Harzing, 2007), so it is difficult to find a balance.

  Nevertheless, negative correlations were found between scores on the cultural dimensions of collectivism, high uncertainty avoidance, and high power distance and expressed interest in the e-learning scenarios. These correlations were statistically significant, but weak. Nevertheless, given that these respondents worked in an international setting and usually in a language other than their mother tongue, it is somewhat surprising that any relationships of this type were found. In addition, Reiche and Harzing (2007) state that research has shown that English-language questionnaires lead to significantly less extreme response styles than questionnaires in a respondent's native language, thus minimizing cross-cultural differences. Finally, expressed interest in an e-learning scenario cannot be easily measured to an exact degree. Given these constraints, these small correlations should not be summarily dismissed, but instead suggest that further research is warranted.

  The dimensions of collectivism, high uncertainty avoidance and high power distance are atypical of the Anglo-Saxon world; thus lending some support to the argument that e-learning

courses designed by Anglo-Americans are embedded with a world view not shared by other cultural groups.

Despite criticism of Hofstede's work, several studies refer to Hofstede as an explanation for study results. For example, Anakwe, Kessler, and Christensen (1999) found that collectivists shun any form of mediated instruction or communication.

In a mixed model study, Gunawardena et al. (200)1 examined differences in perception of the online group process and development between participants in Mexico and the United States. Groups differed in their perception of the norming and performing stages of group development. The authors reported that the resulting differences in how the groups viewed the relationship between learners and instructors was reflective of Hofstede's findings on power distance. They also indicated that even in high-power distance countries like Mexico, the anonymity provided by the online environment may play a role in creating a more democratic learning environment.

In a third example of a study using Hofstede's cultural dimensions, Sanchez-Franco, Martinez-Lopez, and Martin-Velicia (2008) found the individualism and uncertainty avoidance dimensions to be moderating effects on the use of Web-based learning technologies. Firstly, perceived ease of use was weighted more strongly by individualistic and weak uncertainty avoidance educators. "Secondly, the high perceived risk associated with the ICT usage traditionally reduces uncertainty avoidance societies'' perceptions of their self-efficacy in using the technology; its perceived usefulness; and ease of use" (p.596).

It seems that although the statistical relationship is weak, and determining individuals' cultural identity by their geographical location or ethnicity risks stereotyping (Wang, 2007),

these theoretical cultural dimensions do appear to give at least a starting point in the research. However, further research is needed to determine the usefulness of subjecting research participants to long questionnaires designed to measure their cultural dimensions, as opposed to using previously published research generalizing national cultures, for what it is worth.

Conclusions

Global e-learning, where learners from one culture are participating in courses designed and delivered by American, Australian, British and Canadian universities while remaining within their own culture, is growing at an unprecedented rate due to the affordability and availability of the Internet and other ICTs. Similarly, multinational corporations and non-profit organizations are also increasingly using e-learning to deliver training to a diverse, multinational and multicultural workforce. What are the characteristics of the particular challenges that these global learners encounter in an online setting?

Based on the responses to the questionnaire, there is evidence to suggest that while there are challenges in learning online that are experienced by all learners, such as balancing work with study, global learners experience additional challenges. Take for example, barriers to access such as the lack of an adequate technological infrastructure in many parts of the world. Particularly for a synchronous webinar-based learning course, time zone differences were perceived as problematic. Respondents repeatedly suggested having at least part of the online problem-based course or the webinar course in a face-to-face situation. Something that was acknowledged as costly, but nevertheless, they felt was important.

What are the ways that cultural and linguistic differences manifest themselves as difficulties and opportunities in global online learning environments? In the context of an

evaluation of three possible e-learning scenarios, respondents from this study perceived cultural differences as particularly challenging when solving a problem using a globally dispersed team approach. One respondent described the limitation if the online problem-based learning scenario as, "Coming to a consensus if the group is too diverse". Similarly, another respondent said, "Cultural diversities may limit scope of solutions as members of the group tend to invoke their cultural preferences first". On the other hand, many of the respondents also appreciated the benefit of learning from colleagues in other offices, particularly their more experienced colleagues. So, in some cases, encountering cultural diversity was also perceived as an opportunity to learn more.

Linguistic differences were perceived as challenges for all three learning scenarios. In fact, language was a challenge for a quarter of the respondents, who indicated that they would prefer courses in their mother tongue. Even for some learners who felt comfortable studying in English, language could exacerbate other problems, such as poor audio connections. Half of the non-native speakers preferred to communicate with the trainer and other learners using a keyboard, while half did not. If it is not feasible to produce the e-learning course in languages other than English, then language difficulties need to be taken into account. There are a few strategies for supporting learners who are not native speakers of English. For example, there could be links to online dictionaries. In addition, if there sufficient numbers of speakers of the same language, they could have their own chat room and discussion forum where they can communicate using their mother tongue. Finally, based on the results of this survey multiple communication channels should be incorporated into the e-learning course to accommodate the differing preferences.

Finally, do current theories regarding the influence of culturally related factors in online learning cast light on research results? It seems that the theoretical cultural dimensions of collectivism vs. individualism, power distance, and uncertainty avoidance, appear in the results, and in ways that would be expected given the current research literature, but the effects are very subtle. Clearly, it is difficult to measure culture and to reduce it to a few factors. However, while a large number of factors could be more accurate, such a model would be more cumbersome, and perhaps less useful. These theories of cultural dimensions provide a useful vocabulary for describing and discussing cultural differences, but the results of this study cannot conclusively answer this particular question. They can only suggest that research examining cultural dimensions and learning continues to be carried out. As Wang and Reeves (2007) point out, there is no obvious relationship between cultural dimensions and instructional design principles.

To date, there has only been limited research examining the cultural aspects of online learning and teaching. In particular, there is a lack of larger scale studies. This study filled a gap in the literature by researching the design preferences and attitudes concerning e-learning of the employees of a multi-national global organization. In a sample of 538 employees, 107 different nationalities and 76 different spoken languages were represented. Additionally, this sample represented a range of ages and professions. This survey provides some baseline data that was previously missing.

Further research

Given that there is, in general, a lack of research concerning the cultural aspects of online learning and teaching, and especially larger scale empirical studies, this research study leaves a number of areas unresolved and open for further research.

Interaction, whether it be learner-instructor, learner-content or learner-learner, has emerged as an important variable in online education (Gunawardena, Linder-VanBerschot, LaPointe & Rao, 2010), but research, including this study, has revealed varied perspectives. This study asked participants to imagine the limitations and advantages of three typical e-learning methodologies. Responses frequently indicated that the level of interaction for each of the scenarios was an important indicator of perceived quality and effectiveness. Further research to understand this factor is needed by investigating actual course satisfaction and learning gains experienced by learners for a variety of e-learning scenarios.

Some researchers, such as Nathan (2011), have asked if a global organization has a superseding culture that overrides the multiple cultures of its employees. In this study, respondents' cultural background did appear to have a small influence on expressed interest in the three e-learning scenarios. Interest in taking a course is the first step. Further research could investigate if cultural factors emerge in measured course satisfaction and learning gains in a variety of e-learning scenarios.

Parrish and Linder-VanBerschot (2010) ask which cultural dimensions are most important to consider in adapting instruction. In this study, collectivism, high power distance, and high uncertainty avoidance emerged as factors, albeit it small ones, in expressed interest in three typical e-learning designs and in attitudes towards learning such as the meaning of silence in an online learning situation. If these results are replicated in other studies, then what is the best way to measure these theoretical dimensions of culture? Furthermore, can these cultural dimensions be linked to design principles?

There are two other theories that might provide theoretical frameworks for further investigation into the design preferences for and attitudes concerning e-learning in a global learning environment. Respondents in this study often made comments that could refer to aspects of social presence, i.e. intimacy and immediacy, and aspects of a technology acceptance model, i.e. perceived usefulness and perceived ease of use. However, in this study respondents were only imagining being in a course. In a real life course, social presence and a technology acceptance model may prove to be useful in investigating cultural differences in preferences.

One interesting finding of this study was the preference expressed by 22% of the respondents to remain anonymous or use a pseudonym when studying online. This appears to be an area where qualitative research methods could be used to gain a deeper understanding of this phenomenon. Similarly, further investigation is needed to determine why almost 20% of these working adults did not agree with the statement the learner is primarily responsible for their own learning. Is this culturally related, or a consequence of a busy work schedule?

Finally, how do we accommodate the growing numbers of learners, who are non-native speakers of English in global e-learning courses? How do we find the balance between providing a relevant learning experience for all while respecting cultural and linguistic differences? This study has provided a starting point for exploring these questions.

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Appendix A

Questionnaire on culture and e-learning

Demographic Information

1. Gender: Male ☐   Female ☐

2. Age   ☐ years

3. What is your first language (mother tongue)? [Drop down list]..............

4. What other language or languages do you use regularly?

	Read	Write	Listen to	Speak
	[Drop down list]	[Drop down list]	[Drop down list]	[Drop down list]
	[Drop down list]	[Drop down list]	[Drop down list]	[Drop down list]

5. What is your nationality? [Drop down list of countries]

6. How many years have you worked with the UNHCR? ☐ years

7. What is your grade? [Drop down list, G1-D2?]

8. What is your current professional area within UNHCR? [Drop down list: Protection, Finance, Supply, etc.]_____

9. In which subject area or profession are you trained? _____

10. How would you describe your feelings about using computers in general?

      ☐ I try to avoid using them

      ☐ I use them only because I have to in my work

      ☐ I feel OK about using them.

   ☐I enjoy using computers.

11. How many times have you taken a course or training programme that used a *learning management system (LMS)* such as "Learn and Connect"?

□ never　　　□ once　　　□ twice　　　□ three or more times

Learning approach

There are several ways of organizing e-learning courses. Each design has advantages and disadvantages depending on: the content of the course, the needs of the learner, the objectives of the course, etc. From your perspective, how would you evaluate the following learning scenarios? You might want to consider time, effort, logistics, subject, your type of job, etc. Any additional comments to explain your answer would be helpful.

12. The course is structured around solving a real-world problem related to work in the UNHCR. You work as part of a geographically dispersed team to analyze the problem, make decisions on what needs to be done next, and act upon these decisions to resolve the problem situation satisfactorily within a given time frame. It is up to the learners to decide together how to analyze the problem in order to find a satisfactory solution.

   a. How interested would you be in taking a course organized in this way?

   □ not interested　　□ might be　　□ interested　　□ very interested

   Your comments/suggestions: _____

   b. From my perspective a limitation/drawback of this type of learning is _____

   c. From my perspective an advantage to this type of learning is _____

   d. Changes to this design that would make it more suitable for my learning situation

   _____

13. You work alone at the computer. Several sources of information (within the course or links to material on the intranet or Internet) are provided. The computer asks you to study the content provided or look at the linked information. You are given a scenario about a real-life challenge and have to work through a sequence of questions which ask you to deal with the challenge. You have to search through the information provided to find the best answers. The computer judges how well you do in dealing with the challenge.

    a. How interested would you be in taking a course organized in this way?

        □ not interested   □ might be   □ interested   □ very interested

        Your comments/suggestions: _____

    b. From my perspective a limitation/drawback of this type of learning is _____

    c. From my perspective an advantage to this type of learning is _____

    d. Changes to this design that would make it more suitable for my learning situation

        _____

14. Learners sit at their own computer and are connected in real-time to a trainer and to other learners via the Internet. Through their computer learners can see and hear the trainer give a lesson at a pre-set time. Learners can ask and answer questions through the telephone or other technological tools.

    a. How interested would you be in taking a course organized in this way?

        □ not interested   □ might be   □ interested   □ very interested

        Your comments/suggestions: _____

    b. From my perspective a limitation/drawback of this type of learning is _____

c. From my perspective an advantage to this type of learning is _____

d. Changes to this design that would make it more suitable for my learning situation

_____

Learning experience

15. Silence in a training situation indicates a respectful attitude towards the instructor/trainer.

□ strongly disagree   □ disagree   □ agree   □ strongly agree

16. I believe I can learn from my peers.

□ strongly disagree   □ disagree   □ agree   □ strongly agree

17. I like to have self tests to see how much I have learned.

□ strongly disagree   □ disagree   □ agree   □ strongly agree

18. I feel at a disadvantage if I can communicate with the instructor/trainer and other learners using only written words (chat, email, etc.)

□ strongly disagree   □ disagree   □ agree   □ strongly agree

19. Students are primarily responsible for their own learning.

□ strongly disagree   □ disagree   □ agree   □ strongly agree

20. Training materials should contain examples of multiple cultural perspectives.

□ strongly disagree   □ disagree   □ agree   □ strongly agree

21. In an online situation (webinar or virtual classroom) I prefer:

□ to remain anonymous

□ to have a pseudonym

□ to use my name

Language questions for learners who are not native speakers of English

i. I prefer to take courses in my mother tongue.

   □ strongly disagree   □ disagree   □ agree   □ strongly agree

   your comments/suggestions: _____

ii. I prefer to read a summary of the material in my mother tongue before the written/spoken

   material is presented in English

   □ strongly disagree   □ disagree   □ agree   □ strongly agree

   your comments/suggestions: _____

iii. I prefer to take courses in English.

   □ strongly disagree   □ disagree   □ agree   □ strongly agree

   your comments/suggestions: _____

iv. When there is an audio component explaining some aspect of the course, I want it to be in

   my mother tongue or a language other than English.

   □ strongly disagree   □ disagree   □ agree   □ strongly agree

   your comments/suggestions: _____

v. In an online course that takes place in real-time I prefer to interact with the teacher and

   other students through typing on a keyboard, e.g. email, chat, discussion forum instead

   of speaking e.g. telephone, Skype, etc.

□ strongly disagree　　□ disagree　　□ agree　　□ strongly agree

your comments/suggestions: _____

Von Till-Stull Attitude Survey

Please mark your response to each of items 1 through 40 according to the following scale:

SA= I strongly agree with this
A= I agree with this
N=I have no opinion on this
D= I disagree with this
SD= I strongly disagree with this

	SA	A	N	D	SD
1. It is important that people conform to the organization's norms in order to reach company goals.	□	□	□	□	□
2. It is important to me to plan for the future very carefully.	□	□	□	□	□
3. The eldest male should be the head of the household.	□	□	□	□	□
4. It is very important for me to receive recognition for my work.	□	□	□	□	□
5. If an individual thinks of a different way to perform a task, that person should be encouraged to do it that way.	□	□	□	□	□
6. I enjoy taking risks.	□	□	□	□	□
7. Employees should participate in organizational decision-making.	□	□	□	□	□
8. My job is only one of many parts of my life.	□	□	□	□	□
9. I would always cooperate to keep group harmony.	□	□	□	□	□
10. Organizational rules are always to be followed.	□	□	□	□	□
11. It is all right for employees to disagree openly with their bosses.	□	□	□	□	□
12. I would rather work for a small organization than a large one.	□	□	□	□	□
13. It is important that people have lots of free time to pursue their own interests.	□	□	□	□	□
14. Organizational conflict is healthy.	□	□	□	□	□
15. Employees should not talk to their bosses about personal matters.	□	□	□	□	□
16. It is more important to me to be paid well than to have a close	□	□	□	□	□

	SA	A	N	D	SD
relationship with my boss.					
17. Parents have the right to choose the spouse for their children.	□	□	□	□	□
18. A manager must be an expert in the field in which he or she manages.	□	□	□	□	□
19. It is all right for employees to call their bosses by their first names.	□	□	□	□	□
20. It is important for me to keep my work life separate from my private life.	□	□	□	□	□
21. When children become 21 years of age, they should be encouraged to move away from home.	□	□	□	□	□
22. I can achieve anything I set out to achieve.	□	□	□	□	□
23. Power and wealth are evil.	□	□	□	□	□
24. The most important things to my career are a good salary and a job that I do well and like.	□	□	□	□	□
25. It is important that I receive individual recognition at work.	□	□	□	□	□
26. Change in my life is important to me.	□	□	□	□	□
27. It is important for manages to make all decisions.	□	□	□	□	□
28. It is important to shake hands before all business interactions.	□	□	□	□	□
29. If I were given a large sum of money, I would share it equally with members of my family.	□	□	□	□	□
30. Managers and bosses should be selected on the basis of seniority.	□	□	□	□	□
31. It is important that bosses closely supervise their employees.	□	□	□	□	□
32. It is important to finish one activity before rushing off to another.	□	□	□	□	□
33. When I work on group projects, it is important for me to be the leader.	□	□	□	□	□
34. It is important to be flexible during negotiations.	□	□	□	□	□
35. It is important for me to be able to work independently.	□	□	□	□	□
36. People must learn to make their own way in this world.	□	□	□	□	□
37. When working on a project, I would rather work as a group member than as an individual	□	□	□	□	□
38. Employees should remain with one employer for life.	□	□	□	□	□

	SA	A	N	D	SD
39. I like to trust and to cooperate with other people.	□	□	□	□	□
40. People will achieve organizational goals without being pushed	□	□	□	□	□

Appendix B

Number of respondents by country of nationality

Country	Frequency	Percent	Valid Percent
Afghanistan	12	2.2	2.3
Algeria	2	.4	.4
Argentina	12	2.2	2.3
Armenia	1	.2	.2
Australia	7	1.3	1.3
Austria	6	1.1	1.1
Bangladesh	6	1.1	1.1
Belgium	6	1.1	1.1
Benin	3	.6	.6
Bosnia and Herzegovina	3	.6	.6
Botswana	1	.2	.2
Brazil	4	.7	.8
British Virgin Islands	1	.2	.2
Bulgaria	1	.2	.2
Myanmar (Burma)	7	1.3	1.3
Burundi	6	1.1	1.1
Cameroon	4	.7	.8
Canada	16	3.0	3.0
Chad	6	1.1	1.1
Chile	1	.2	.2
China	3	.6	.6
Columbia	5	.9	.9
Congo	11	2.0	2.1
Costa Rica	2	.4	.4
Croatia	3	.6	.6
Cyprus	1	.2	.2
Czech Republic	1	.2	.2
Denmark	5	.9	.9
Djibouti	2	.4	.4
Ecuador	3	.6	.6
Egypt	4	.7	.8
El Salvador	1	.2	.2
Eritrea	3	.6	.6
Ethiopia	7	1.3	1.3
Finland	2	.4	.4
France	25	4.6	4.7

Country	Frequency	Percent	Valid Percent
Gabon	1	.2	.2
Palestinian Territory	1	.2	.2
Georgia	1	.2	.2
Germany	11	2.0	2.1
Ghana	4	.7	.8
Greece	1	.2	.2
Guinea	3	.6	.6
Guinea-Bissau	1	.2	.2
Hungary	18	3.3	3.4
India	9	1.7	1.7
Indonesia	1	.2	.2
Iran	6	1.1	1.1
Iraq	4	.7	.8
Ireland	2	.4	.4
Italy	11	2.0	2.1
Jamaica	1	.2	.2
Japan	9	1.7	1.7
Jordon	8	1.5	1.5
Kenya	8	1.5	1.5
Kosovo	1	.2	.2
Kyrgyzstan	3	.6	.6
Lebanon	3	.6	.6
Liberia	4	.7	.8
Libya	1	.2	.2
Liechtenstein	1	.2	.2
Macedonia	4	.7	.8
Malawi	2	.4	.4
Malaysia	13	2.4	2.5
Mali	1	.2	.2
Mauritania	1	.2	.2
Moldova	2	.4	.4
Namibia	1	.2	.2
Nepal	10	1.9	1.9
Netherlands	9	1.7	1.7
New Zealand	4	.7	.8
Nigeria	3	.6	.6
Northern Mariana Islands	1	.2	.2
Norway	6	1.1	1.1
Pakistan	15	2.8	2.8
Papua New Guinea	1	.2	.2
Peru	1	.2	.2
Philippines	2	.4	.4
Poland	1	.2	.2
Portugal	1	.2	.2

Country	Frequency	Percent	Valid Percent
Romania	1	.2	.2
Russia	5	.9	.9
Rwanda	1	.2	.2
Senegal	2	.4	.4
Serbia and Montenegro	13	2.4	2.5
Somalia	2	.4	.4
South Africa	3	.6	.6
Spain	8	1.5	1.5
Sri Lanka	6	1.1	1.1
Sudan	10	1.9	1.9
Swaziland	1	.2	.2
Sweden	4	.7	.8
Switzerland	6	1.1	1.1
Syria	6	1.1	1.1
Tajikistan	4	.7	.8
Tanzania	5	.9	.9
Thailand	14	2.6	2.7
Togo	2	.4	.4
Turkey	1	.2	.2
Uganda	10	1.9	1.9
Ukraine	6	1.1	1.1
United Kingdom	17	3.2	3.2
United States	16	3.0	3.0
Yemen	7	1.3	1.3
Zambia	2	.4	.4
Zimbabwe	1	.2	.2
Total	527	98.	100.0
Missing 999	11	2.0	
Total	538	100	