A Literature Review and Directions for Future Research on International Student Perceptions of Online versus Face-to-Face Education: Program-centered Characteristics

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Abstract

As higher education institutions continue incorporating online education into their curricula, different cultural perspectives regarding online versus face-to-face education will impact upon its sustained proliferation. Some cultures accept online education (Zhu, Valcke & Schellens, 2009; Lin Liu, Lee, & Magjuka, 2010), while others feel it is inferior (Asunka, 2008) to traditional education. Prior research to study business students' percep-

tions (Fish & Snodgrass, 2014, 2015) found two research streams: student-centered and program-centered characteristics exist. This study focuses on the current state of literature with respect to program characteristics and culture, and suggests future directions for research in this area. Program characteristics include course organization, academic rigor, program quality, academic integrity, faculty involvement and student-to-instructor interaction, communication mechanisms, student-to-student interaction, and program technologies. Results have implications for instructors and administrators especially as institutions endeavor to attract new international students to their online programs.

Keywords: International Student Perceptions, Online, Face-to-face

LITERATURE REVIEW

The Babson Survey Research Group notes the continued proliferation of online education in higher education (Allen & Seaman, 2013). While academic administrators believe that learning outcomes through online education are the same or superior to those in traditional FTF classrooms (Allen & Seaman, 2013), critics argue that due to intrinsic differences, online education does not replicate the learning that occurs in the traditional classroom (Bejerano, 2008). As technology continues to evolve and online education continues to expand its horizons, researchers continue to study student perceptions in the online learning environment (e.g. Allen & Seaman, 2013; Fish & Snodgrass, 2014, 2015; Perreault, Waldman, Alexander & Zhao, 2008; Tanner, Noser, and Langford, 2003; Tanner, Noser, Fuselier & Totaro, 2004-1; 2004-2; Tanner, Noser, Totaro & Birch, 2006; Tanner Noser & Totaro, 2009). Since online courses may reach across borders, and based upon previous literature that suggests that foreign students have different needs than their Western classmates in face-to-face (FTF) classes (Selvarajah, 2006), students' cultural backgrounds affect their perception of the online learning environment (Popov et al., 2012). Prior research to study business students' perceptions found two research streams exist: student-centered and

program-centered characteristics (Fish & Snodgrass, 2014, 2015). With a focus on the program-centered research, we review literature on student perceptions of online versus FTF education with an emphasis on cultural implications.

What do we know about cultural perceptions about online education now? Each culture has its own way of processing information, learning, instructing and solving problems, and a nation's culture affects students' engagement, relations and perceived benefits from online education (Lee, Becker & Nobre, 2012). Differences in the manner in which people learn and different cultural learning models exist (Brislin et al., 1975; Charlesworth, 2008; Fang, 2007; Jin, 2002). Cultural backgrounds differ in terms of cognitive styles, rules of behavior, communication styles, attitudes and belief systems, and human relations (Hofstede, 1991). They present distinct challenges and opportunities to the growth of online education - particularly related to differences in academic abilities, gender, perceptions of time, professional status, student expectations and tolerance for criticism (Chase, Reeder & Roche, 2002).

Cultural differences impact upon student perceptions between online and FTF education (Grandon, Alshare & Kwun, 2005; Lin, Liu, Lee & Magjuka, 2010; Olesova, Yang, & Richardson, 2011). Previous studies examined differences across cultures (Cronje, 2011; Chew & Yee, 2015; Grandon et al., 2005; Li & Kirkup, 2005; Popov et al., 2012; Popov, Noroozi, Barrett, Biemans, Teasley, Slof & Mulder 2014; Zhu, Valcke & Schellens., 2009) and within cultures (Adler et al., 2001; Chase et al., 2002; Hamdan, 2014; Okwumabua, Walker, Hu & Watson, 2010). In a recent cross-cultural comparison between Malaysian and Australian students, no significant differences in students' perceptions existed on computer usage, lecturer support, equity, student interaction and collaboration (Chew & Yee, 2015). In another study at a large, southeastern University in the U.S., both African-American and Caucasian American students' perceptions view online learning positively (Ashong & Commander, 2012).

Some countries, such as China and India, appear to be attractive destinations for online education; however, world-wide acceptance of online learning is not evident. In some countries people perceive online education as second-rate to FTF education or believe the education is purchased and not assessed (Khoo & Azizan, 2004; Hamdan, 2014). As a result, these countries enacted policies that do not recognize online degrees (Asunka, 2008; Kathawala Abdou, & Elmul, 2003; Hamdan, 2014). In nations where gender plays a factor in educational experiences (that is, men and women are separated), such as east African nations, a lack of advancement in online education and a lack of research into how cultural factors may be impacted by online activity (Hamdan, 2014), may impact upon future growth and acceptance in these areas of the world.

Students' perceptions toward online learning and blended approaches may change over time (Benbunan-Fich & Hiltz, 2003). For example, research at the turn of the century indicated differences between Australians and Asian students in student perceptions (Smith & Smith, 1999; Ramburuth & McCormick, 2001); however, a more recent study found no significant differences existed on many factors for these groups (Chew & Yee, 2015). Yet, another study reported on changes in Chinese students' motivation and learning strategies after an online collaborative experience towards a social-constructivist learning approach (Zhu et al., 2009). Since many studies were performed over a decade ago, what are students' *current* perceptions regarding online versus FTF?

As education methods change to incorporate more online elements and technology advances, educators and administrators need to understand these perceptual differences to be successful. Today, instructors skills are critical in online delivery, and as online education crosses global boundaries, instructors need to understand different cultural and technological environments when designing learning activities (particularly discussion forums) (Chew & Yee, 2015). Current research on students' perceptions can be divided into two streams of research - student-centered (concentrating on differences between students' perceptions based upon

individual demographic and perceptual characteristics) and program-centered (concentrating on program design issues that may be controlled by the instructor). Since research in each stream has increased significantly in recent years, here we focus on the literature pertinent to student perceptions regarding program-centered characteristics and cultural implications in online education. Program-characteristics addressed here include: a general overview of cultural program issues, course organization, academic rigor, program quality, academic integrity, faculty involvement and student-to-instructor interaction, communication mechanisms, student-to-student interaction, and program technologies. Based upon the literature review, we offer recommendations for future research within each subtopic.

Cultural Program Issues. Hofstede's framework (1986), a seminal article in cross-cultural communications, proposed four dimensions: power distance (social status and its impact upon learning), individualism-collectivism (tendency of individuals to act as individuals or as part of a group), uncertainty avoidance (degree to which individuals accept uncertain situations and results), and masculinity-femininity (masculine cultural values favoring maximization of society outcomes versus female cultural values favoring relationships and quality of life improvements). Several studies explored differences between individualistic and collective societies' perceptions within (Hornik & Tupchiy, 2006; Lin et al., 2010) and across cultures (Selvarajah, 2006; Zhu et al., 2009). Other studies explore dimensions relative to one another and student perceptions. In one study, individualistic students' motives, interaction styles and performance mechanisms are more compatible with distance learning than collectivistic students (Anakwe & Christensen, 1999). And in yet another study, power distance and uncertainty avoidance tend to amplify each other, while together they assist in movement from individualism toward collectivism (Cronje, 2011). In contrast to Hofstede's framework, which critics cite as lacking fluidity, the 'flexible' approach to educational design recommends developing courses that are capable of catering to the diverse cultural perspectives, rather than simply containing 'pre-

determined content'(Collis, 1999). For example, researchers propose developing the key aspects of the course contingent upon the cultural dimensions but design the course flexible enough to allow students and instructors to choose their own learning and teaching styles as the course progresses (Collis, 1999; Henderson, 1996; McLoughlin & Oliver, 2000).

The ability to transport a course to a different culture may be impacted upon by cultural differences related to course design, delivery and technological medium (Lee et al., 2012). In an online MBA study (Lin et al., 2010), course cultural differences were noted for:

- assessment (exam-oriented (collective; Eastern societies) versus process-oriented (individualistic; Western societies));
- instruction/interaction (lecture versus conversation; structure (Eastern) vs. less structure (Western));
- deductive versus inductive learning;
- asynchronous versus synchronous communication (lack of visual cues causing communication barriers, scheduling issues for cross-cultural collaboration, time zone differences);
- collaboration (collectivism vs. individualism; masculinity versus femininity);
- case learning (lack of global cases, lack of local issues for international students, lack of international experience of online instructors);
- academic conduct (discrepancies between US and other countries' rules of academic conduct), and
- language (barriers in reading, writing and communication).

Several studies explored cultural program differences between two or more cultures. For example, the U.S. instruction style leans toward a learner-centered, process-oriented style with interaction and participation as critical components, while Eastern instruction tends to be lecture-centered with an emphasis on exams (Lin et al., 2010; Zhang, 2007). Appropriate cross-cultural training for instructors is needed so instructors can design appropriate courses (Lin et al., 2010). However,

what advise should instructors be given to address these issues? Therefore, while we propose other cultural questions below, we pose Research Questions #1*: What cultural issues should be and which should not be addressed in online program design? Do different cultures and their associated relationship to Hofstede's four dimensions differ with respect to students' perceptions regarding online and FTF? Do different cultures regard the 'flexible framework' (Collis, 1999) the same or differently?*

Course Organization. Cultural influences merit consideration in designing and planning an online course that potentially 'has no borders' as the designer needs to understand the various student cultures and provide an equitable and culturally-sensitive platform for knowledge transfer (Chen, Mashhadi, Ang & Harkrider, 1999; Selvarajah, 2006). While flexibility and convenience are the most common reasons American students cite as to why they take online courses (Armstrong, 2011; Horspool & Lange, 2012; Leasure, Davis & Thievon, 2000; Perreault et al., 2008), Americans perceive the course organization – particularly the structure of the learning environment and the nature of online assessment, as key to student learning and success (Armstrong, 2011). Ambiguous instructions increase student distress in online courses (Merisotis & Olsen, 2000; Perreault et al., 2008) as students want concise, specific directions on everything (Armstrong, 2011). Eastern students have an even higher affinity for structured courses than Western students (Lin et al., 2010).

Research-based validated online frameworks and benchmarks to plan, design, deliver and assess online education depend on an effective course design in the West that uses a student-centered model (Mortagy & Boghikian-Whitby, 2010). Eastern educational systems tend to be based upon memorization of material and the instructor as the center of the educational process, while Western education systems tend to focus on the process and discussion between classmates and the instructor (Lin et al., 2010). The traditional Saudi Arabian FTF curriculum requires rote memorization, a single point of view (instructor), passive learning that excludes diversity; however the online environment encourages

student-centered learning favoring collaboration, critical thinking and student-to-student interaction (Hamdan, 2014). Russian and U.S. students noticed differences in assessment styles (Lin et al., 2010) as Western assessments tend to be process-oriented, while Eastern assessments tend to be exam-oriented (Lin et al., 2012). As another example of cultural organization differences, Ghana students responded negatively to online constructivist teaching approaches such as asynchronous discussions and ill-structured project-based learning activities (Asunka, 2008). Differences in how instructors organize courses lead to Research Questions #2: *Do different cultures expect and perceive online course structure differently? Do different cultures expect and perceive online assessments differently? Do different cultures need different types of directions regarding how to complete online activities?*

Academic Rigor. With respect to academic rigor, results are mixed as some studies indicate that online is more rigorous than FTF (Dobbs, Waid & del Carmen., 2009), while other studies indicate that FTF is more rigorous than online (Armstrong, 2011). In sub-Sahara Ghana, students perceived collaborative online learning as complex, more demanding and time-consuming than in a FTF environment (Asunka, 2008). In one study of social loafing (whereby one group member does not contribute to group work fully or undermines the group work process), Chinese students displayed less social loafing than American students (Tsaw, Murphy & Detgen., 2011). American online students disliked the academic rigor associated with working independently (Fish & Snodgrass, 2014). Therefore, with respect to academic rigor, we pose Research Questions #3: *Do different cultures perceive differences in the academic rigor associated with online courses? Do different cultures perceive social loafing differently in the online environment?*

Program Quality. While chief academic officers claim that online learning is now of the same quality as traditional courses (Allen & Seaman, 2013), research into student's perceptions of quality are mixed. Some studies indicate students perceive the quality to be better and more fun

with a technology-enhanced online learning environment (Fjermestad, Hiltz, & Zhang, 2005; Hannay & Newvine, 2006; Parker, 2003), and other studies indicate the opposite as students held the view that online learning offered no advantage over FTF (Asunka, 2008). Similarly, online experience factors into quality perceptions as students who took an online course disagree with the statement that the quality of online courses was lower than FTF, while those who had not taken an online course felt online quality was lower (Dobbs et al., 2009). Contrastingly, one study noted that in some African countries, people perceive online learning as second-rate to FTF education (Asunka, 2008). Thus, with respect to program quality, we pose Research Question #4: *Do students from different cultures perceive the quality of online programs differently than FTF ones?*

Academic Integrity. Rumors regarding online cheating abound. In general, since the chance of being caught is low, students may be inclined to cheat more online than in the FTF classroom. While most criminal justice students indicated that they never cheated, a comparison of FTF and online student perception indicates that cheating is more common in online courses than FTF (Lanier, 2006). Students with higher grade point averages, females, married and older students are less inclined to cheat (Lanier, 2006). In our previous study, FTF and online students felt cheating is easier online than in the traditional classroom (Fish & Snodgrass, 2014). In FTF classes, different cultures regard different activities as 'cheating'. Different cultures must understand the protocols and guidelines for using online communication prior to joining an online course along with ethical standards (such as privacy, security, plagiarism and academic dishonesty) associated with the online delivery host country (Hamdan, 2014). Therefore, with respect to academic integrity, we pose Research Question #5: *Do different cultures perceive online cheating to be more, the same or less rampant than in the FTF classroom?*

Faculty Involvement and Student-to-Instructor Involvement. Several studies show the positive relationships between the perceived quality of the instructor and perceived student learning (Armstrong,

2011; Richardson & Swan, 2003). In the FTF classroom, results demonstrate that the greater the degree of student involvement, the greater the student learning (Pascarella & Terenzini, 1991). Since it is more difficult for instructors to provide affective support to students in online learning (Mullen & Tallent-Runnels, 2006), Research Question #6a: *do students perceive instructor involvement to be an important factor in online instruction?* Mixed results with respect to student communication with the online instructor exist. Some studies indicate that online interaction with the instructor is equal or even more positive than FTF (Boyd, 2008) as online students perceive faculty as having high expectations and faculty are available to communicate, interact and provide feedback (Mortagy & Boghikian-Whitby, 2010). Yet another study indicates no significant difference between online and FTF interaction with the instructor (Horspool & Lange, 2012). However, other studies indicate FTF student perceive greater interaction than online students (Fish & Snodgrass, 2014; Wang & Morgan, 2008; Wuensch, Aziz, Ozan, Kishore & Tabrizi, 2008). Since traditional Western and East Asian educational systems prepare students differently as Western teaching promotes facilitative, informal relationship between students and the instructor, while East Asian cultures foster more formal relationships in order to show proper respect (Zhu et al., 2009), Research Question #6b: *how do different cultures view the student-to-instructor interaction?* For example, in Saudi Arabia, online education facilitated a cultural shift (for women) from instructor-centered to student-centered learning as student-to-instructor and student-to-student interaction occurred (Hamdan, 2014). Contrastingly, Flemish students disliked the inability to get direct and immediate assistance from their instructors and fellow students as they would in a FTF environment (Zhu et al., 2009). Thus, Research Question #6c: *Do different cultures perceive the student-to- instructor interaction online to be more, the same or less than in the FTF environment?*

Communication Mechanisms. Communication practices are significantly influenced by one's culture (Hall, 1990), and cross cultural communication is about building trust through reduction of communicative

uncertainty, constructing shared meaning and optimizing technology use (Cronje, 2011). Online students typically complain about the lack of verbal, visual and social context cues (Popov et al., 2014). Student perceptions are being shaped by communication speed and consistency (Armstrong, 2011). Student satisfaction in online courses improves for students who have immersed themselves in the course through satisfying requirements, and informal and formal chats (Ohara, 2004). Research results are again mixed as some studies indicate online courses enhance learner participation and interactivity (Fredericksen, Pickett, Shea, Pelz, & Swan, 2000; Maeroff, 2004; Wang & Morgan, 2008), and others highlight student distress (Hara & Kling, 2003) or general feelings of 'disconnect' due to the lack of FTF interactions (Stodel, Thompson & MacDonald, 2006). Similarly, the inability to interact through posing questions, sharing opinions, engaging in dialogue, or a sense of belonging to a group influence student perceptions as to how well they perform in an online class (Picciano, 2002; Song, Singleton, Hill & Koh, 2004). Several online studies indicate that students report communication issues with other students (Horspool & Lange, 2012) along with a general unwillingness of other online learners to participate in group activities (Dirkx & Smith, 2004; Maeroff, 2004). Online students report meeting with their peers less often than FTF students and form fewer study groups than FTF students (Horspool & Lange, 2012). In the online environment, a lack of visual cues (which causes communication barriers, scheduling issues for cross-cultural collaboration and time zone differences) adds other barriers to the educational process (Lin et al., 2010).

The design of online courses that potentially 'have no borders' needs to consider the communication, cross-cultural understanding and provide an equitable and culturally-sensitive platform for knowledge transfer (Selvarajah, 2006). Differences exist in the way cultures communicate and control situations (Lin et al., 2010). Eastern students preferred to have more direction from their instructors than Western students who prefer student interaction (Liang & McQueen, 1999). International students being educated through U.S. systems need additional support to reduce cultural

language and learning barriers as the international online learners felt 'marginalized' by their American counterparts who essentially 'took over' the learning experience; however, the international students did not feel that this control negatively impacted upon their communication or collaboration in learning (Lin et al., 2010).

Many studies explored the differences between collectivist and individualist cultures. Collectivist (or high context) cultures, such as the Chinese, Korean, Japanese, Vietnamese, Greek and Arabian, use body language and associated gestures along with the immediate physical and social environment in communication (Hamdan, 2014). Collectivistic-oriented are more concerned with social relationships in group projects and work to never offend anyone (Popov et al., 2014). Online education that does not include visual or verbal cues inhibits critical aspects of FTF communication for collectivist societies (Hamdan, 2014), and they respond to the lack of visual cues with respect by using their perceived understanding of the partner's cultural perspective (Popov et al., 2014). Collectivistic-oriented students found the lack of voice tone and facial expression in text-based communication makes it harder for them to interpret and respond in a non-threatening way to a partner, and therefore, they often avoiding expressing differing opinions as they see them as counterproductive (Popov et al. 2014). Low-context (or individualist) cultures, such as U.S. and many northern European countries, tend to be direct and informal communicators (Hamdan, 2014). Individualistic-oriented students seek clarity in conversation, use low-context, direct and explicit messages that focus on the task at hand, and are concerned with verifying the correct information (Popov et al., 2014). Due to a lack of nonverbal, visual and social context cues, individualistic-oriented students often find that it is difficult to get a message across successfully; however, they report that differences in opinions may improve the work quality and the lack of in-depth discussion may hinder successful project performance (Popov et al., 2014). Therefore, instructors should address multicultural differences in collaborative environments to improve the learning experiences and set expectations, such as fostering activities for social interaction early

on (particularly for collectivists), and students should have training on how to develop communication skills that may improve coordination between culturally diverse groups (Popov et al., 2014).

Therefore, with respect to communication mechanisms, we pose Research Question #7: *Do students from different cultures perceive online and FTF communication differently?*

Student-to-Student Interaction. Cultural differences within team work between virtual teams and student perceptions exist (Olesova et al., 2011). Cultural background adds an important dimension to collaborative learning as teams are virtual, may be multidisciplinary and potentially multicultural (Popov et al., 2014). Collaborative problem-based learning encourages students to develop teamwork, collaboration, cooperation, critical thinking through analysis, synthesis, evaluation and reflection (Zhu et al., 2009). Cultural background may influence a student's understanding of the required collaborative processes and perceptions, and therefore, the required actions that are likely to be effective (Lans, Oganisjana, Taks & Popov, 2013). Postgraduate management students from different cultural backgrounds, ethnicities and nationalities may respond to educational styles differently (Selvarajah, 2006). A lack of trust in a partner's expertise may seriously inhibit collaboration (Popov et al., 2014). A critical barrier to students learning online may be a lack of social interaction online (Muilenburg & Berge, 2005) as some students are reluctant to participate in interactive learning and others prefer to work individually regardless of cultural background (Pfaff & Huddleston, 2003). Students reported that free-riding, insufficient English skills and students not communicating properly are the most challenging aspects to online performance (Popov, Brinkman, Biemans, Mulder, Kuznetsov & Noroozi, 2012). Cross-cultural learning in blended learning is most effective when personal interaction between the person and the cross-cultural environment occurs (Pillay & James, 2014).

Group work, which includes group membership (members' experiences and skills) and group processes (communication, problem solving and

decision making, conflict management and leadership), poses challenges for students regardless of whether national or international members, but multicultural groups increase the complexity (Popov et al., 2012). A key to online success is the student-to-student interaction (especially through asynchronous conferencing), which fosters rich interactions and in-depth thinking as participants can think through responses prior to responding (Kim Liu & Bonk, 2005). In our previous study, online students disliked the student interaction compared to FTF classes (Fish & Snodgrass, 2014). However, when English is the required language, language difficulties may pose challenges for international students and increases the comprehension complexity between group members with different language levels and accents (Popov et al., 2012). Free riding negatively influences group climate, group participation and group performance (Popov et al., 2012).

Group composition variables – homogeneous or heterogeneous groups, are critically important to the functioning and overall success of a collaborative learning environment (Popov et al., 2012) as cultural background differences either benefit or disrupt dynamics (Halverson & Tirmizi, 2008). Coordinating different group perceptions, reasoning and communication styles can pose issues in online collaboration as students with different cultural backgrounds may have different perceptions of collaborative learning, which can lead to conflict (Popov et al., 2014). Culturally diverse groups' expectations and perceptions may be completely different with respect to group learning and moral behavior, possibly leading to misunderstanding and conflict (Popov et al., 2012). The group may approach conflict differently, adding to the online complexity (Popov et al., 2014). Educators should focus on positive experiences while downplaying negative ones to encourage multicultural groups to develop their abilities to be more successful (Popov et al., 2012).

When forming groups, cultural background – as to whether the individual is individualistic or collectivistic, should be taken into account (Popov et al., 2012). Individuals from collectivistic and individualistic

cultures differ in their attitudes toward diversity among group members as collectivists dislike diverse groups as they feel they cannot function effectively, while individualistic groups believe group work can be advantageous because of the confrontation and problem solving (Sosik & Jung, 2002). Regardless of the group composition, students from collective cultural backgrounds responded more positively to collaborative work than students from individualistic cultural backgrounds; however, students from individualistic cultural backgrounds performed better on learning outcomes than students with collectivist backgrounds (Popov et al., 2014). Collectivistic-oriented students perceive online collaborative learning more positively than individualist oriented students (Popov et al., 2014), and collectivistic oriented students prefer working in groups and feel that they perform better in groups, share more knowledge and exhibit less conflict-oriented behavior (Phuong-Mai Terlouw & Pilot, 2006). However, collectivistic-oriented students voiced concern regarding learning from a peer (Popov et al., 2014). In general, individualists seek personal goals while collectivists seek group success, individualists prefer working separately from groups which are seen as contrary to individual goals, and individualists are more likely to 'loaf' due to greater need to work alone (Earley, 1989). Students' cultural background (individualistic vs collectivistic) affects their perceptions of the challenges that they must overcome in collaborative projects as students from individualistic cultures consider free riding to be a problem in group work, while students from collectivistic cultures view it as less important (Popov et al., 2012).

In recent years, several researchers began to explore specific cultural differences in group work behavior. In one study, Eastern students tend to exhibit face-saving, modest personalities in group work and prefer group work, while American students appear to be independent, assertive and exhibit a competitive attitude that dominates group work (Lin et al., 2010). Western students are more accustomed to a student-centered class, while Asian students are more teacher-centered (Chin, Chang & Bauer, 2008). Chinese and New Zealanders differed in their educational objectives and preferred different assessment methods (Selvarajah, 2006).

In a comparative study between the Chinese and American culture, Chinese students performed differently than their American classmates in the online environment as they were more passive, diligent, formal and content-oriented, deferent to the teacher, concerned for others and worried about losing face in contrast to their American counterparts (Wang, 2006). In another study, British students were more likely to use computers to study than Chinese students (Li & Kirkup, 2005).

Several researchers noted changes in students' perceptions following collaborative activities. For example, in Saudi Arabia, online education facilitated a cultural shift (for women) from instructor-centered to student-centered learning as more student-to-student and student-to-instructor interaction occurred (Hamdan, 2014). In yet another study, a cultural gap existed between Chinese and Flemish students; however, after a collaborative experience, Chinese students' motivation and learning strategies changed significantly towards a social-constructivist learning approach (Zhu et al., 2009). While Flemish students' perceived the online experience more positively than Chinese students; Flemish students disliked the inability to get direct and immediate assistance from their instructors and fellow students as they would in a FTF environment (Zhu et al., 2009).

Therefore, with respect to Student-to-Student Interaction, we pose the following Research Questions #8: *Do cultural homogenous or heterogeneous online groups perform better? Do students from different cultures perceive homogeneous and heterogeneous online groups differently? Do students from collective societies behave differently than students from individualistic societies in online interactions with other students? Do students from collective societies behave differently than students from individualistic societies in online interactions with instructors? What techniques and methods can online instructors use to facilitate online cultural heterogeneous group work? In gender separated educational systems, do men and women perceive online education the same or differently?*

Technologies. Online education offers greater access to learning resources (Sener & Stover, 2000), and requires skills such as maintaining a stable or wireless Internet connection, Internet navigation, searching for relevant information, using multimedia applications, uploading a file to an asynchronous or synchronous conferencing system, writing and publishing on the Internet, opening a web browser or even publishing on a web-site (Tekinarslan, 2011). With respect to technical issues, students appear technically well-equipped to take online courses as less than 40% reported significant communication issues (Hospool & Lange, 2012). However, many students doubt their abilities and use of the technology, require reassurance before they trust the technology, and some students never trust it (Ohara, 2004). Unfortunately, faculty weak in understanding technology appear to utilize technology in a way that creates confusion (Armstrong, 2011). Students utilize nonacademic resources (e.g. Google) more readily (due to familiarity) than academic resources (cumbersome and difficult to navigate) in completing assignments (Armstrong, 2011). Students reported the most important technology activities include accessing unit information, accessing lecture/lab notes, interacting with unit learning resources, reading online discussions, contacting lecturers/tutors and submitting assignments online (Palmer & Holt, 2010). Students perceived video modules, quizzes and the textbook as valuable to the learning environment regardless of online or FTF (Horspool & Lange, 2012). They indicated receiving feedback on assignments and reviewing unit progress as needing attention by the instructor (Palmer & Holt, 2010). Instant messaging can be a technique to increase dialogue and reduce distance between students in an online course (Wang & Morgan, 2008). In our study, online students perceived homework, discussion and videos as adding the most to their understanding, while instructor lectures and in-class sessions decreased their understanding; however, FTF students perceived instructor lectures, interaction with others and in-class sessions increased their understanding (Fish & Snodgrass, 2014).

Many online courses neglect the relationship between student characteristics and instructional methodologies as the important role of culture

and its impact on various methods appears to be neglected in online course design (Pillay & James, 2014). Cyberspace has a culture and gaps can exist between individuals as well as between individuals and the dominant cyber-culture, which increases the likelihood of miscommunication (Chase et al., 2002). The lack of elements found in FTF communication acerbates the intercultural communication online by limiting opportunities to give and 'save face' as well as draw meaning from nonverbal cues (Chase et al., 2002). The lack of contextual cues can inhibit students – particularly collectivist students, which may benefit from adding video or voice connection activities to online capabilities (Popov et al., 2014). Through web interface design, websites of high power distance countries may be characterized by high levels of structured information, controlled access to information and several layers to acquire information (Marcus, 2000). One study reports that Yahoo Groups discussions encouraged cultural integration between individualistic instructors and collectivist students (Cronje, 2011). To create and online culture, particular attention should be paid to synchronizing participant and facilitator expectations (Chase et al., 2002). At a large, southeastern University in the U.S., both African-American and Caucasian American students' perceptions view online learning positively; however, African-Americans were significantly less positive toward asynchronous features of online learning (Ashong & Commander, 2012). Common ground versus differences between cultures should be sought through reducing communication uncertainty by shared meaning construction and appropriate use of technology (Cronje, 2011).

With respect to technologies, we pose Research Questions #9: *Do students from different cultures respond differently to the technology? Do students from different cultures require different technological skills in the online environment? What technologies and activities do different cultures prefer in the online and FTF environments?*

DISCUSSION

Obviously our literature review is not a comprehensive review of literature in this area; however, it highlights the ambiguity that exists for student perceptions of online program characteristics and culture. Research shows mixed results for students' perceptions of program characteristics (including course organization, academic rigor, program quality, academic integrity, faculty involvement and student-to-instructor interaction, communication mechanisms, student-to-student, and technologies) between cultures. While many studies demonstrate differences between specific cultures which should be considered in online program design, instructors need tools and methods to address the wide variety of cultures that may be attending each class. Online classes need to be designed for *every culture at the same time*, which is a difficult and complex undertaking. This undertaking is similar to addressing the needs of students with disabilities, and will take research, development and time to properly incorporate into online education.

Mixed results in cross-cultural comparisons exist for many program characteristics; however, recent research appears to indicate that the Millennials generation regard online education differently and are more accepting than Gen-Xers or Gen-Yers (Chew & Yee, 2015). Additionally, several studies note that students' perceptions changed over time (Benbunan-Fich & Hiltz, 203; Karns, 2005; Mortagy & Boghikian-Whitby, 2010; Perreault et al., 2008; Ramburuth & McCormick, 2001; Smith & Smith, 1999; Zhu et al., 2009), which leads to the more general Research Questions #10: *Do today's students perceive cultural differences in the online environment differently than the generations before them? Have student perceptions shifted? Given a shift has occurred, do today's students differ – by culture – in their online perceptions for program characteristics? If yes, for what factors are important for instructors to consider?*

Previous research demonstrates mixed student perceptions of online education that differed in facility size (small, medium, and large universities), audience (e.g. scientific versus social sciences, business versus

non-business, and graduate versus undergraduate), method of research (e.g. interview, survey), completion at a large university or in a public forum (Tanner et al., 2003; Tanner et al., 2004-1; 2004-2; Tanner et al, 2006; Tanner et al., 2009), a small environment (e.g. Armstrong, 2011), or in non-business fields (e.g. Dobbs et al., 2009; Lanier, 2006; Leasure et al., 2000; Reilly, Gallager-Lepak & Killion, 2012; Tekinarslan, 2011; Wang & Morgan, 2008). Our previous preliminary results highlighted, the context of the study (a Jesuit, Catholic institution) may be an important factor to consider in interpretation of the student perceptual survey results (Fish & Snodgrass, 2014; 2015), which leads to another set of corresponding research and Research Question #11: *Do students at private institutions perceive online program design cultural issues differently than students at public institutions?*

As online education continues to be 'borderless', instructors need to design courses to bridge cultural gaps; however, this is a moving target as technology and student expectations are changing. Theoretically, instructors should design online education such that students perceive the online and FTF environments equally – regardless of culture. Given the mixed research results as outlined above, we posed several research questions to explore and understand student perceptions of online course design respective of different cultural backgrounds. While cross cultural comparisons offer one point of comparison, the bigger issue is how to address these research questions for *all* of the worlds' various cultures. Obviously, significant work remains!

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