Designing online courses that effectively engage learners from diverse cultural backgrounds

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Abstract
This study examines the effect of an important cultural dimension—power distance index (PDI)—on learners’ perceptions of their online learning experiences. PDI refers to the degree to which a learner’s response to another individual in a learning setting is inhibited or otherwise negatively altered when the other individual holds a position that is superior or inferior to the learner’s own position. This study aims to generate guidelines for better design and facilitation of online courses that can effectively engage all students in the learning process. Research findings are particularly relevant to researchers and practitioners who are interested in the cultural aspects of online learning. This study contributes to the current knowledge base about designing effective online courses and about practicing culturally responsive teaching in an online setting.

Introduction
Online courses often involve students of diverse cultural and linguistic background. Different students may exhibit varying levels of engagement in various course components such as communication and collaboration tools, activities, format of the assignments, types of assessment and teaching strategies. This study explores whether students’ cultural orientation affects their online activities and their perceptions of
course components. This study specifically examines the interaction, if any, between learners’ power distance perception and specific course components, and whether any such interaction has an identifiable effect on the learners’ motivation in the learning environments. The study aims to generate guidelines for designing and facilitating online courses that can effectively engage all students in the learning process.

**Theoretical framework**

With the increasing global outreach of online programmes and courses, designing and delivering online learning that can be engaging to a global audience is an area that desperately needs more systematic research. Recent studies (eg, Picciano, 2002; Reis, 2003; Simon, 2002; Wang, 2004; Wang & Kang, 2006) have commonly revealed that learning outcomes improve when learners are better engaged in learning, such as by establishing their own goals, exploring appropriate resources and working with others in groups. Some studies (eg, Picciano, 2002; Wang, 2004) reveal a positive correlation between students’ visible learning behaviours, such as participating in online activities, and their learning outcomes (ie, overall grades). Wang’s (2004) study suggests that students’ online visibility affects their performance on certain tasks that require more social presence, such as communication and collaboration with others (group cohesion).

In an online setting, students may present themselves cognitively, socially and emotively (Wang & Kang, 2006). Social presence is about presenting oneself as a ‘real person’ in a virtual learning environment. Cognitive presence is about sharing information and resources, and constructing new knowledge. Emotive presence is about learners’ expression about their feelings of self, the community, the learning atmosphere and the learning process. In their paper about online pedagogies (cybergogy) of engaged learning through information and communication technologies, Wang and Kang (2006) note that students learn better when they are socially, cognitively and emotively immersed in the learning process.

Cultural attributes, however, can affect online presence and learner perceptions. At present, there is still a lack of empirical research on the influence of cultural attributes on learners’ engagement in online activities. Although culture can be examined from various perspectives, the cultural dimensions Hofstede (2001) developed are the most applicable to teaching and learning. Hofstede (2001) identified five dimensions to differentiate culture in learning settings: power distance index (PDI), individualism (IDV), masculinity, uncertainty avoidance index (UAI) and long-term orientation. Among the five dimensions, PDI, IDV and UAI can affect how learners react to course design, conduct and learning activities (Hui, 1988; Triandis, 1995). The study presented in this paper examines power distance because the literature (Selinger, 2004; Tylee, n.d.) points to its greater influence on student learning. PDI refers to how people respond to other individuals who hold positions that are superior or inferior to their own. Specifically, students whose cultural orientation is to view instructors as occupying positions of high relative power to students are likely to be intimidated by interacting in class or with the instructor (http://www.geert-hofstede.com/). In a learning setting, do stu-
Students see their instructors as equals whom they can easily approach or as superiors whom they should not question or challenge? This study addresses the ways in which students’ sense of power distance affects their participation in online learning activities and their perceptions of an online learning environment.

**Research methods**

This is a descriptive/survey study coupled with qualitative content analysis (Fraenkel & Wallen, 2002) and a few email interviews with some of the course instructors. The researcher used online surveys to assess students’ cultural attributes and to collect their perceptions on course design and delivery. She then used qualitative content analysis to compare the online courses from several critical aspects:

1. use of communication tools (same-time/synchronous tools such as Breeze, chat and instant messaging vs. delayed-time/asynchronous tools such as emails, discussion board and bulletin board system [BBS]);
2. format of the assignments (individual or teamwork, exams, essays, reports or projects);
3. assessment (solely by the instructor, peer review and self-evaluation); and
4. course conduct: teacher-centred one-way presentation/lecture or two-way interaction between teacher–student and student–student.

Participants in this study were from four higher educational institutions dispersed across three nations: the US, China and South Korea. The researcher selected online courses from these institutions primarily because of the pedagogic and cultural contrasts of the three nations (Kwon & Danaher, 2000). For example, the pedagogy for distance education in the US is increasingly more focussed on interactive and student-centred learning (Kwon & Danaher, 2000), but online courses offered in China and South Korea often feature teacher-centred presentation and students’ silent note taking (Yu, Wang & Che, 2005). Table 1 displays the dimensions of cultural variability among the three nations.

Overall, China and South Korea have high-context cultures, in which meaning is often implied in context, while the US has a low-context culture, in which meaning is more literal and less strongly connected to context. The US has an individualistic culture that emphasises individual goals and achievements, while China and South Korea have collectivistic cultures that emphasise group goals and achievements. China and Korea have high cultural acceptance of uneven distribution of power and thus have high power distance, while the US has low cultural acceptance of uneven distribution of power and thus has low power distance. China and South Korea have a high cultural tolerance for ambiguity and thus have a low level of UAI, while the US has low cultural tolerance for ambiguity and thus has a high level of UAI (Kwon & Danaher, 2000; Yu et al., 2005).

These cultural differences guided the sampling for this study. However, determining individuals’ cultural identity by their geographical location or ethnicity risks stereotyping. To avoid this, the researcher conducted a presurvey to obtain individuals’ Likert
scale rating on a hypothetical scenario that reflects their sense of power distance. The individual scores were then aggregated to generate a PDI score for groups by the cultural identities individuals provide, primarily Anglo-American, Chinese and South Korean. This score was then used as a parameter to analyse responses to the post survey to examine if learner perceptions of and their participations in an online course differed by their cultural identity. ‘Cultural identity’ here refers to the primary culture in which an individual grew up, such as Thai, South Korean, Mexican and American (Anglo-American, African-American, Asian-American, American Indian, etc.).

The final sample includes (1) online students from a large southwestern university in the US, (2) online students from an international online university in South Korea and (3) online students from a leading science and technology university in East China. Most of these courses were at the graduate level, which helped increase the likelihood that at the time of this study, most of the participants were comfortable with and were reasonably knowledgeable about online learning environments and online survey tools.

Data collection and analysis
This descriptive research used both quantitative and qualitative data to search for evidence of student perceptions that can be analysed by their cultural attributes. The researcher collected data through (1) a presurvey (http://surveymonkey.com/s.asp?u=61201883523) on students’ power distance orientation, which assessed how students perceived the power relationships in online learning settings; the higher the score, the stronger their senses of power distance with their superior and inferior counterparts in the course; (2) a post survey on students’ perceptions on the major components of an online course they take or took. These components included modalities of communication (being same time or delayed time), online activities, assign-
ments, course design and teaching strategies. The postsurvey items were generated from the content analysis of the course curriculum, syllabus and accessible course websites, and were organised into five categories (http:// surveymonkey.com/s.asp?u=33189893587):

1. demographic information, and goals and reasons for taking the online course;
2. students’ perceptions on the helpfulness of synchronous meetings and interactions, their motivation to participate in these meetings, their feelings about these meetings and the extent to which they were able to freely express their thoughts and opinions during these meetings;
3. students’ perceptions on asynchronous meetings and interactions on similar aspects described in asynchronous meetings;
4. students’ feelings about individual assignments, motivation to complete them and their levels of comfort in approaching the instructor and classmates for help; and
5. students’ perceptions on teamwork.

One hundred and thirty-eight respondents (a 50% response rate) filled out the presurvey, and 74 respondents (a 25% response rate) filled out the postsurvey on students’ perceptions on online courses. The decrease in response rate for the postsurvey was due mainly to the students’ busy schedules at the end of the semester when the survey was conducted. Data were analysed both quantitatively (for Likert scale ratings) and qualitatively (for open-ended responses). Responses from all postsurvey participants are insightful and revealing on their own and thus are reported here in full. Afterwards, the respondents to the postsurvey were matched by their identifier (initials) with the respondents to the presurvey. Only those who completed both the pre- and postsurveys were included in the further analysis on PDI scores and learner perceptions and participations. The group PDI scores and some other ratings related to power distance, both obtained from the presurvey, were used as parameters to run statistical analyses with the postsurvey responses. All these intended to address the question whether learner perceptions and participations in an online course differed by their cultural attributes.

Findings

Curriculum analysis
A great majority of the responses in the American group were from online students of an educational technology programme in North America. All the online courses in this programme use Macromedia Breeze (see Figure 1), a robust course tool that supports live meeting with audio and video, discussions via live chat, sharing of e-resources (PowerPoint slide, uniform resource locator and any other type of documents). All courses in this programme involve both synchronous (i.e., Breeze meetings) and asynchronous communications (discussion board and listserv). Also, all courses are balanced with individual assignments and team projects that address problems in real work or life (Table 2).

Figures 2 and 3 illuminate the learning environment and learning management systems used by the participants from China. The interface of the Korean courses is not available for inclusion.
The primary culture in which the 74 postsurvey respondents grew up was rather diverse, including American (Anglo-, Latin-, African-American and American in general), Chinese (Mandarin), South Korean, German, Japanese, Hispanic, Appalachian, Canadian and a cultural/ethnical mix of Korean and Thai. Responses from all postsurvey participants are reported here because the postsurvey results are insightful and revealing. However, only responses from Anglo-American, Chinese and South Korean are included in further statistical analysis with the presurvey on cultural orientation, because no other cultural group was represented by more than three or four responses. These less represented groups were therefore necessarily excluded from statistical analysis, because PDI scores can only be calculated for groups and because of the insufficient statistical power resulting from such small sample sizes.

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<table>
<thead>
<tr>
<th>Course components</th>
<th>The US</th>
<th>China</th>
<th>South Korea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use of communication tools (synchronous, asynchronous)</td>
<td>Breeze, webcast, live chats, instant messaging, discussion board, blog, email, listserv</td>
<td>Webcast (online broadcast), cellphone text messaging, discussion board, email</td>
<td>Mostly instant messaging, discussion board, email, listserv</td>
</tr>
<tr>
<td>Format of the assignments (individual or teamwork, exams, essays, reports or projects)</td>
<td>Both individual and teamwork, projects</td>
<td>Individual work, primary exams</td>
<td>Individual work, exams and essays</td>
</tr>
<tr>
<td>Assessment: instructor, peer review, self-evaluation</td>
<td>Instructor, peer review, self-evaluation</td>
<td>Instructor</td>
<td>Instructor</td>
</tr>
<tr>
<td>Course conduct: teacher-centred one-way presentation/lecture or two-way interaction between teacher–student, and student–student</td>
<td>Student-centred, two-way interaction</td>
<td>Teacher-centred, one-way presentation</td>
<td>Mostly teacher-centred, one-way presentation</td>
</tr>
</tbody>
</table>

Table 2: Comparison of curriculum (The US, China and South Korea)
Cultural differences reflected in the post survey
Below is a summary of the common patterns that emerged across all cultural groups in the postsurvey responses and also of the major cultural differences reflected in these responses.

Motivation to participate (survey Section 1)
A great majority of the respondents, regardless of their cultural attributes, took an online course to gain knowledge and skills. Although Asian students sometimes pursue a degree to ‘save face’ or to glorify their families with good grades, this survey shows that graduate students from all cultures were more self-motivated than other-motivated. It is delightful that nearly three quarters of the group was intrinsically motivated (to gain knowledge and skills), while only a tiny percentage was externally motivated (to finish a degree or further career). However, as to their participation in online discussions (either synchronous/same-time or asynchronous/delayed-time discussions), most of the respondents said that they were obligated to do so by course requirement. Accordingly, securing help in completing assignments was one of the major reasons that respondents participated in various online activities. For American students, connecting with others was another major motivator for their active participation in online discussions and other activities.

Preference for modalities of communication (survey Sections 2 and 3)
Among the courses studied, the number of online courses that included asynchronous tools (discussion board, email, listserv and blogging) was much higher than the number
of courses that included synchronous tools (chat, webcast, instant messaging, video-conferencing and conference call). Forty-six respondents indicated that the courses they commented on use synchronous tools, with chat being the most commonly used, followed by live meeting with Macromedia Breeze, other tools (writings every week, text messaging, free board and presentation), noninteractive recordings and interactive videoconferencing. Sixty-one respondents indicated that the course they commented on use asynchronous tools. Among them, discussion boards or BBS were the most commonly used, followed by emails, listserv, blogs and other tools—cellphone text messaging (China) and nonblog journal entries (America).

Overall, of the various tools used in online courses, asynchronous tools (eg, discussion boards, email, listserv and blogging) were better liked than synchronous tools (eg, live chat, webcast, instant messaging, videoconferencing and conference call) by all cultural groups. This is reflected in the 82% ‘somewhat helpful or very helpful’ rating for asynchronous tools and the 65% rating for synchronous tools. The American group
had similar mean ratings on the helpfulness of both types of tools. The Chinese and Korean groups, in particular, preferred delayed-time discussion over same-time discussion. The primary factors reducing the popularity of live-meeting tools included technical difficulties, low audio quality, necessity to be online at certain times, lack of opportunities to interact in live meetings and their language abilities. Students from China and Korea commonly felt that computer-mediated communication limits their ability to clearly and candidly express thoughts and ideas. The discussion boards, however, allowed them to think through the discussion topics and to contribute more thoughtful and better worded ideas. Asynchronous tools were preferred by these two groups for the additional reason that these tools support a salient Asian cultural trait in interpersonal communication: think more, talk less, and think it through before speaking.

No matter what tools they used to communicate, American students found it easy to communicate online; Korean students were most hindered by online communication, possibly because of their cultural perceptions on electronic communications as impersonal and even impolite (Kwon & Danaher, 2000). Chinese students, who typically grew up in noninteractive learning environments (Yu, 2002; Yu et al., 2005), found online broadcast with no interaction to be the most comforting way of learning. Some even expected online learning to be similar to the conduct of traditional classrooms.

In the open-ended ‘other’ category in ‘how you feel about these live-meeting tools’, the participants’ comments revealed the impact of learner expectations and learning styles on learner perceptions. The Chinese students who were accustomed to listening and note taking felt comfortable and satisfied with noninteractive broadcast online because it created a familiar classroom-like learning environment and because they could study at the comfort of their home or office. In contrast, students who were more active in classrooms, as was typical with the American students studied and as was the case with some Chinese students, wished to be able to communicate with people at the other end of the broadcast.

Their ‘other’ feelings about asynchronous tools included (1) dislike of the practice of linking discussion posts to grades, (2) decline in motivation stemming from the unresolved arguments and lack of student involvement, and (3) the inconvenience in accessing these tools. To make asynchronous discussions more effective, the topics themselves have to be interesting to take on a momentum. In addition, the design of the threaded type of discussion board can use some improvement too. The ‘inconvenience’ generally refers to the lack of the interface openness of most discussion boards, which often only show the titles of discussion but collapse the content.

Freely expressing thoughts and opinions (survey Section 4)
As suggested by social constructivism, open and candid communications in an online setting can facilitate information exchange, negotiation, debate and the construction of shared knowledge. As this study shows, communication tools, instructor support and
students’ language abilities all influence how well they express themselves in various online communications. Sixteen respondents said they were able to freely express thoughts and opinions in live meetings and that encouragement from the instructor was vital for their open communication. However, many students experienced difficulties in freely expressing themselves because of insufficient instructor facilitation, technical difficulties or their limited proficiencies with technology or English. Several Korean students, who were taking an English-speaking class in Korea, could not compose their thoughts in English fast enough to write freely in live meetings. In other cases, the instructor retained control of most discussions. Additionally, the ‘rules’ for online participation were unclear. Both Chinese and Korean students, who rarely spoke in traditional classrooms, felt lost when they were expected to speak online. They wondered if there were any rules and rituals for them to follow.

Free expression is also constrained by the students’ knowledge that online discussions are publicly viewed. Rookie online learners can be hesitant to interact with others because online communication may lead to misunderstandings due to the absence of emotion and physical cues. Several Korean students found it a bit awkward to talk to the others live online, when they were accustomed to communicating only via asynchronous boards. Live meetings posed greater challenge for them to type fast, think fast and be spontaneous. A few found it frustrating when they could not keep up with the communication. Korean students felt most hindered by computer-mediated communications. Their cultural perceptions on electronic communications as impersonal and even impolite played a great role here. In general, even students enrolled in distance courses expect a high level of face-to-face contact between students and instructors (Kwon & Danaher, 2000). This paradox explains Korean students’ common feelings of inability to express themselves freely online, either in synchronous or asynchronous venues.

By contrast, 45 respondents were positive about the support of asynchronous tools for free and open communication. They were able to ask questions, get to know classmates, fulfil course requirements and socialise with others, and they were not restricted by the instructor in what to post and not to post. English learners (some of the Korean students), who felt constrained by live discussions, found the discussion board to be a great place to practise writing in English and to get help with assignments. They liked the discussion board also because they had more time to think and to articulate their ideas. They also enjoyed reading feedback from others and liked how a dialogue was formed in this mode of communication. Some, however, admitted that they played the role of ‘lurkers’ or ‘sleepers’, the type of learners who read the messages but speak only if they have questions. Among these ‘lurkers’, some felt inhibited about expressing themselves because their discussions were public. Others were concerned about not being able to take back their posts and not being able to receive instant feedback, and also to react immediately to what others have posted.

In summary, a great majority of the American students enjoyed online communications. But both Chinese and Korean students, who rarely spoke in traditional class-
rooms, felt lost about how to interact online. And they looked for communication ‘rules’ to follow. These comments reveal the influence of the traditional perceptions on the teacher as an authority, and this ‘power’ relationship still influences how students behave in online sessions. The Chinese students’ feelings of being lost online reveal the influence of the traditional Chinese pedagogy, which often features instructor-centred lecture or presentations, in which students are passive audience members who take notes and try to pass exams (He & Yu, 2005). Heavily influenced by the Confucius value systems, teachers are often respected as authorities and should not be ‘interrupted’ with questions when they talk.

Perceptions on individual assignments and teamwork (survey Sections 5 and 6)
Sixty-three respondents (87.5%) worked on individual assignments, while 30 respondents (41.7%) were involved in either formal or informal teamwork. According to the curriculum analysis, most of the American courses studied here required formal teamwork, while most of the Chinese and Korean courses studied did not require formal teamwork. The Korean online university encouraged students to work in teams or with a buddy based on their needs and learning preferences. Courses offered in the Chinese institutions did not require teamwork at all.

While a substantial percentage of students (63%) considered teamwork either ‘somewhat helpful’ or ‘very much helpful’, a significantly higher percentage (84%) ranked individual assignments on these two scales, and the gap is even greater for the higher ranking of ‘very much helpful’, 44.4% for individual assignments versus 25.7% for teamwork. This trend is consistent with the middle ranking: 15.9% rated the individual assignments as ‘not much a help’, compared with the 20% ‘not much a help’ response to teamwork. The greatest gap is reflected in the lowest ranking: only 1.6% found individual assignments to be not helpful at all, compared with 17.1% who found teamwork to be unhelpful. Student feelings about the modality of assignments reveal an interesting variance between the top and bottom rankings: about 60% rated individual assignments as either exciting/interesting or satisfying/pleasurable, compared with only 43% positive responses for teamwork. But a much higher percentage (23.4% versus 2.8%) found individual assignments to be boring and uninteresting. However, teamwork could be more discouraging (13.9 vs. 7.8%).

For all cultural groups, individual assignments could be boring and challenging; teamwork could be engaging but time consuming. Apparently, the challenges posed by working with a team spared nearly all students from complete boredom, but more students rated individual work as highly interesting and helpful than rated teamwork in that manner. Because the educational system in both Korean and Chinese culture encourages more competitive than collaborative learning, very few Korean students reported their involvement in teamwork. Most of the Chinese respondents reported their informal collaboration with a study buddy. This aligns with the literature report about Chinese students’ tendency to connect with another student and to collaborate informally (He & Yu, 2005).
Cultural differences reflected in the statistical analyses of pre- and post surveys

The PDI scores for the three groups were obtained from their responses to the presurvey, a hypothetical scenario about four types of managers and which type the respondent would like to work for. The PDI scores of the three groups varied a great deal. On the basis of the participants’ answers to the presurvey and the validated Hofstede (2001) formula, the PDI score of the Anglo-American group \((n = 31)\) was 78 (lowest); the PDI scores of the Chinese \((n = 15)\) and Korean \((n = 29)\) groups were 95 (highest) and 93 respectively.

Participants’ perceptions on teacher and teaching in general (presurvey)

Item 4 on the presurvey assessed the participants’ perceptions and expectations on teacher and teaching in general. The three questions that are closely related to sense of power distance were analysed inferentially with the Kruskal–Wallis analysis of variance test, with cultural identity being the independent variable. The results indicate the following:

1. There were significant differences in the participants’ perceptions about being equal with their instructor. The Korean group had the highest mean rank (45.53) on a scale of 1 (strongly agree) to 5 (strongly disagree). By contrast, the Anglo-American group had the lowest mean rank (29.77) and therefore perceived their instructors more as equals.

2. There was no significant difference in the participants’ perceptions about rules of conduct in online classes. The Chinese group had the lowest mean rank (29.36), an indication of a stronger agreement about implementing specific rules of conduct. This result aligned with some of their narrative comments about ‘feeling lost’ and hoping for more guidance.

3. There were highly significant differences in their perceptions on course conduct. Again, the Chinese had the lowest mean rank, an indication of a stronger agreement about conducting courses in a formal manner.

Post survey: approaching superior and peer when completing individual assignments and teamwork

Other responses to the post survey that reflect the impact of power distance include learners’ comfort level in approaching (1) the instructor/facilitator/teaching assistant for help with individual assignments and/or teamwork, and (2) peers for help with individual assignments and/or teamwork (see Appendix). The participants rated their comfort level from (1) very comfortable to (2) somewhat comfortable, (3) uncomfortable and (4) very uncomfortable. The lower their mean rating, the higher their comfort level. Kruskal–Wallis analysis of variance was used again to compare the mean differences in the participants’ ranking of comfort level in approaching their ‘superior’ or their peers when completing individual assignments and teamwork if applicable.

When the level of significance is set at 0.05 \((a)\), the small \(p\)-value (0.02) indicates significant difference in the participants’ rating for approaching superiors in individual assignment. The American group, not surprisingly, had the lowest mean rank (30.65).
an indication of greater comfort level in approaching the instructors for help; the Chinese group had the highest mean rank (45.50) and thus has a lower comfort level in approaching their instructors (Item 1, Appendix).

When $a = 0.05$, the small $p$-value ($<0.0001$) indicates highly significant differences in the participants’ comfort level in approaching peers for help with individual assignments. The Chinese group had the lowest mean rank (24.83—higher comfort level), while the Korean group had the lowest mean rank (52.48—lower comfort level) (Item 2, Appendix).

The value $p = 0.236 (>a = 0.05)$ indicates no significant difference in the participants’ comfort level in approaching superiors for help when completing teamwork (Item 3, Appendix).

The high Kruskal–Wallis statistic (24.8) and the small $p$-value ($<0.0001$) again indicates highly significant difference in the participants’ comfort level in approaching peers for help with teamwork. The Korean group (mean rank = 48.75) contributed greatly to this difference. However, the statistical power might have been reduced in this test because of the 17 missing rating values from the Korean group. As mentioned in the curriculum analysis, many of the Korean courses did not involve teamwork, and many chose ‘non applicable’ for this survey question (Item 4, Appendix).

**Summary: influence of power distance evidenced by the four tests**

Conforming to the existing findings about power distance, the American group (mainly Anglo-American) had the lowest PDI score, while the Chinese group had the highest PDI score. Possibly because of their sense of PDI, the American group felt the most comfortable in approaching their instructors for help, while the Korean group felt most uncomfortable in doing so. Chinese students, because of their large class size, did not have much opportunity to interact with the instructors. Still, their reported comfort level in approaching the instructors was low. As to approaching their peers for help, the Chinese group felt the most comfortable in completing both individual assignments and teamwork; the American group felt comfortable, while the Korean group felt the least comfortable in completing both individual assignments and teamwork. Again, the Koreans’ cultural perceptions on computer-mediated communication might have influenced their ratings here. As some of the Korean participants commented, peers or classmates online can be ‘strangers’. As to the high comfort level of the Chinese, it is worth noting that most of these Chinese students worked in self-formed teams and were therefore comfortable about approaching their peers for help.

The four Kruskal–Wallis analyses on the postsurvey items had revealing results. Although there was no significant difference in the three groups’ comfort level in approaching superiors for help with teamwork, there were significant differences in their rating for approaching superiors in individual assignments, and there were highly significant differences in their levels of comfort in approaching peers for help with
individual assignments and with teamwork. Power distance indeed affected students’ ways in approaching instructors and their peers. By contrast, individuals were able to overcome their sense of power distance when working as a group. In other words, individuals became ‘braver’ when working as a team to approach their instructors for help.

**Pedagogic implications**

To encourage more students to actively share and participate in online learning, instructors from all cultures need to be aware of the power distance issue and to position themselves as equals to the students, to respond positively to all contributions and to avoid censoring free speech. They also need to pay special attention to students who might experience difficulties in keeping up with online discussions. An online course should provide both asynchronous and synchronous tools and allow students to choose the ones with which they are most comfortable to encourage more candid and open communication. In addition, some of the discussions should be password protected to reduce students’ concerns about privacy.

To better support learning, the instructors of the Korean and Chinese courses should build some teamwork into the curriculum and should post guidelines for successful teamwork conduct. When guiding online teamwork, the instructor should not assume that teamwork will just ‘happen’ when they assign a few students to a team. Also, they should not assume that team members will learn to resolve conflicts without external help. The instructor should remain as an informal member to each team and should help build healthy, collaborative and functioning teams from the very beginning. There must be clearly set team goals, trust, social networks and an atmosphere for open exchange and communication for teams to be productive online. Also, simply relying on peer review can create a ‘power’ relationship between team members. Although a peer-review system can encourage better contribution and can avoid producing ‘free riders’, the instructor should use peer review as a reference for the individual’s performance, but not as the only grade.

Although the delivery of courses online or via satellite in China has been technologically advanced, online teaching still faces many pedagogical challenges. Many online classes provide very little venue for two-way interaction. Students tune into online broadcast (similar to webcast) as if watching a noninteractive online TV. The large number of students (usually more than 100) in online classes also makes it challenging for the instructor to attend to questions properly. Chinese educators who teach online classes therefore face the bigger challenge of reforming their curriculum and creating new and innovative teaching activities that can make the best use of the available online technologies. Thus, teachers will need systematic training to release their ‘control’ of the classrooms and will need to learn how to encourage students’ initiative and active participation in the learning process. The traditional perception of this teacher–student ‘power’ relationship is going through changes in recent years. The integration of information technology in kindergarten through 12th grade and in higher educational
classrooms have created opportunities for more frequent student–teacher interaction. Multimedia classrooms, in particular, are facilitating China’s pedagogical transformation from the traditional teacher-centred instruction to student-centred learning. To adapt to this new learning environment, instructors will need to reposition themselves as facilitators or coaches. And the traditional Chinese teaching philosophy must gradually change from knowledge transmission to knowledge construction. To encourage the collaborative building of knowledge, the instructor must create meaningful activities to engage students in group or exploratory learning.

Limitations of this study
Five cultural dimensions can affect online learning, but this study only addressed one of them—PDI. Future studies not only need to address these dimensions as separate factors, but also need to examine the interaction among these dimensions and how they might affect learner perceptions and participation. In addition, how learner perceptions and participation may differ by gender is worth examining as well. Existing studies (e.g., Arbaugh, 2000; Rovai, 2001; Wang, Sierra & Folger, 2003) on learning communities have commonly addressed the dynamics of online discourse, have underscored gender differences in discourse (interaction) styles and examined their effects on participation and community. And findings have been controversial. Some argue the importance of considering gender when designing and delivering online learning; some others (e.g., Wang et al., 2003) caution researchers not to overrate gender in studies of online learning and online communities. There have been separate studies on culture and on gender, but there is a dearth of research addressing the interaction of the two.

Educational or scientific importance of the study
Knowing the differences in student perception regarding course content, technology and facilitation of courses is an important consideration in the design and development of online curricula, where real-time cues that aid and impact the teacher–learner communications are not readily apparent. This study uncovers evidence that a culturally anchored characteristic (PDI, in this case) plays a role on how learners perform and persist in online learning environments. The implications are wide ranging, especially for institutions of higher learning that offer their courses internationally. For instance, instructional designers should evaluate their audiences on the basis of an additional cultural dimension and should be better equipped to structure their online learning to present to each learner the activities that the learner can best utilise and benefit from. Existing courses that have high attrition rates can be evaluated and reconfigured to be more responsive to student needs. Finally, a better understanding of the interplay between learner culture and e-learning will result in enhanced access and a heightened potential for success for all e-learners.

Acknowledgement
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design. Ms Minjie Wang for her help with data collection and Prof. Charles Calleros for his helpful comments on an early draft.

References
## Appendix

### Item 1: Individual assignment: approaching superior for help (two-tailed test)

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χ² approximation, corrected for ties

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χ² approximation, corrected for ties

### Item 3: Teamwork: approaching superior for help

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χ² approximation, corrected for ties

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χ² approximation, corrected for ties

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