The Impact of Culture on Personalization of Learning Environments
Some Theoretical Insights

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Abstract. In an increasingly competitive environment, universities around the world are opening their doors for international students due to economical and legislative (e.g. Bologna Agreement) considerations. This process of Internationalisation and Globalisation has made the Universities increasingly multicultural. There are two current trends in higher education: an increase in the use of open and personalised online learning technologies, and a significant internationalisation of the student cohorts. Therefore, the barriers associated with the cultural differences in learning environments and specifically emerging learning environments (e.g. PLEs) become more and more important with the increasing globalisation of education. In this paper the authors explore the impact of various cultural aspects on learning within open and personalized learning environments instigating future pedagogical and technological debate.

Keywords: culture, personal learning environments, pedagogy

1 Introduction

Traditionally technology facilitated learning is delivered within Universities and commercial organisations utilising a Learning Management System (LMS) or Virtual Learning Environment (VLE). These traditional systems are centralized, usually monolithic and fail to address the individual needs of today's learners or simply are not flexible enough to do so [1]. The plethora of Web 2.0 technologies now available means that the learners are increasingly escaping these traditional walled gardens and are involved in creating and consuming content using these disruptive technologies. Propelled by these developments and the need to meet the ever-increasing demand of learning needs within informal, non-formal and life-long settings, new generation learning environments are emerging which offer breakthrough level of personalisation. These learning environments are broadly categorised under the umbrella term Personal Learning Environment (PLE). The pedagogical advantages of PLEs and associated technological debates are already well documented [2–5] along with the challenges they pose.

Despite some of the known pedagogical drawbacks, the centralized and monolithic systems (LMS/VLE) had one major advantage wherein the instructors and designers

could ensure that the learning environment is pedagogically sensitive to their needs. Authors [6-8] outlined a number of pedagogical dimensions that can be utilised by instructors to design interactive multimedia tools and learning environments. Among these dimensions the aspect of 'cultural sensitivity' was mentioned, which is explained as follows: 'Web-based instruction should accommodate diverse ethnic and cultural backgrounds among the learners expected to use it'. With the technological advancement the ability to assemble personalized learning environments is now a reality. As 'One-size-fits-all' doesn't hold true for eLearning anymore and learners can assemble, personalize, curate, organise their learning environments without the involvement of instructors or course designers. One might assume that the learner being in control of their learning will implicitly assemble a culturally sensitive learning environment. However, there is no current evidence to suggest that such an implicit outcome is possible. Based on the literature the authors opine that lack of cultural sensitivity will impede wider PLE adoption and deprive learners of the numerous pedagogical benefits PLEs offer. Hence, this paper attempts to highlight some of these challenges that may still be carried over from the e-Learning 1.0 generation and hopefully will instigate a discourse among the pedagogical community around these issues.

2 Culture: Some Definitions

Culture has been defined in many ways. According to Kroeber and Kluckhohn [9], "culture consists in patterned ways of thinking, feeling and reacting, acquired and transmitted mainly by symbols; the essential core of culture consists of traditional ideas and especially their attached values". Hofstede [10] treats culture as the "collective programming of the mind that distinguishes the members of one group or category of people from another". This author argues that from the many terms used to describe culture, the following three together with values, cover the total concept rather neatly: symbols, heroes and rituals.

- "Symbols: are words, gestures, pictures and objects that carry often complex meanings recognised as such only by those who share the culture.
- Heroes: are persons, alive or dead, real or imaginary, who possess characteristics that are highly praised in a culture and thus serve as models for behaviour.
- Rituals: are collective activities that are technically unnecessary to the achievement of desired ends, but that within a culture are considered socially essential" [10].

3 Cultural Considerations and Potential Impact on PLEs

3.1 Individualistic and Collectivist Cultures

Dupraw and Axner [11] noted that "cultural boundaries are marked by differences in a) communication style, b) attitudes towards conflict, c) approaches to completing tasks, d) decision-making styles, e) attitudes towards disclosure, f) and approaches to knowing, learning and teaching". Some of the differences relate to pedagogy and others to technology. These differences can be broadly attributed towards differing na-

tional cultures and categorized under Individualism and Collectivism. “Individualistic cultures such as those of Western Europe and North America emphasise autonomy, individual initiative, emotional independence, primacy of personal goals over group goals and a right to privacy” [12]. “In contrast, collective cultures such as those of China, Japan, Korea, South-east Asia, Africa and South America emphasise collective identity, emotional dependence, and primacy of in-group goals over personal goals and in-group cohesiveness and harmony” [12]. Individualist and collectivist societies perceive the purpose of education differently. In the former, the purpose of learning is not so much to know how to do, as it is to know how to learn. The assumption is that learning in life never ends; even after school and university it continues. In a collectivist society, “learning is more often seen as a one-time process, reserved for the young only, who have to learn how to do things in order to participate in society” [10]. In the collectivist classroom, confrontations and conflicts with fellow classmates and teachers should be avoided while in an individualist classroom it can be part of the teaching-learning environment. Qian and Pan [13] compared 11th and 12th graders’ epistemological beliefs in the USA and China. Their results indicate that, “Chinese students were more likely to view knowledge as simple, certain and ability innate, whereas US students were more likely to view learning as quick or not at all” “The Chinese e-learner may feel that they are subservient to a teacher and this could prove problematic when no physical tutor exists” [14].

From a cross-cultural perspective, the literature suggests that different cultures conceptualise the role of language in communication differently [15]. For example, in an individualistic culture such as dominant Anglo-American culture, verbal language is a primary means of communication and of transmission of information. People in the individualistic culture therefore value explicit language and tend to stress the importance of accurate expression. In contrast, in a homogeneous, collective culture such as the Korean, verbal language is often unnecessary to share ideas and feelings with others because people may assume shared knowledge and background. In this case, articulate language is less required than in the case of the individualistic culture, and the collective culture tends to stress the importance of good understanding instead, i.e. receptive language skills. Asian cultures emphasise the listener’s role and responsibility in assuring successful communication, whereas Western cultures place the responsibility primarily on the speaker. This pattern suggests cultural differences in language development, such that Asian children may develop higher-level receptive skills and Western children may develop higher-level expressive skills. Collectivist cultures often depend upon informal and non-transparent chains of communication, which challenges existing conception of PLEs. Predominantly learner centred environments (e.g. PLE) require participatory and collaborative outlook without any formal top-down structure and may represent a totally new way of learning to students where previous education experiences in their home country may have featured only the traditional, lecture-based, teacher centred approach and hence these students may be reluctant to participate actively online.

3.2 Long Term vs Short Term Orientation

Cultural value of time orientation may influence on how learners approach PLEs. In Long Term Oriented cultures, perseverance is valued and sacrifices of short-term benefits are typically justified by the long-term rewards [16]. "Long Term Orientation stands for the fostering of virtues oriented towards future rewards, in particular perse-

verance and thrift. It's 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." [10]

Learners from long-term cultures may value the meta-cognitive elements of PLEs much more and would be much more open to use them with the hope to gain greater adaptability to learn in future. On the contrary learners from short-term cultures may seek immediate enhanced cognitive benefits when using PLEs as compared to VLEs/PLEs. If these learners do not see any added advantage in the immediate scope then they will not look positively towards the notion of PLEs.

3.3 Uncertainty Avoidance

Hofstede [17] analysed the nature of teacher-student interaction styles in US. He found out that the "teachers in US tend to allow the students to initiate and control their learning experiences (student – centred approach) and they also allow the students to contradict and criticise the teachers and the teachers regard such disagreement as a stimulating exercise and do not take the criticism personally". Jehng et al [18] showed that "learning beliefs are a product of the activity, the culture and the context in which they are cultivated". Hofstede [17], for example, observed in his research that "the students in US are open-minded, try to reduce uncertainty and integrate new and old ideas and change their belief system accordingly". In contrast, according to Hofstede's analysis, the teacher – student interaction style in South East Asian, especially in Korea, is teacher-centered, where the teacher student relationship tends to be binding and personal. Students are expected to follow structured instructions from the teacher. That is, it is the teacher and not the student who initiates students' learning experiences. This phenomenon is referred to as uncertainty avoidance [10] and described as "the extent to which the members of a culture feel threatened by ambiguous or unknown situations".

PLEs are inherently unstructured environments and potentially full of uncertainties for learners who come from a culture where uncertainties are avoided as much as possible. These learners may soon feel disconnected and demotivated and provisions should be in place to ensure such learners are gradually exposed to the concepts of personalisation and openness with appropriate pedagogical support.

3.4 Power Distance

"Power distance is the extent to which people in a society accept the fact that power in institutions and organisations is distributed unequally among individuals" [19]. Throughout their history, for example, Chinese have shown respect for age, seniority, rank and family background, so what an elderly person says carries more weight over the opinions of younger people. To an American, youth is often prized over age [20]. In the large power distance system the quality of an individual's learning is virtually exclusively dependent on the excellence of his or her teachers. "In the classroom there is supposed to be strict order, with the teacher initiating all communication. Students in class speak up only when asked to, teachers are never publicly contradicted or criticised. In the small power distance situation, students make uninvited interventions in class and are supposed to ask questions when they do not understand something. They argue with teacher, express disagreement and show no particular respect to teachers outside the school. The education process is student-centred and the quality of learn-

ing is to a considerable extent determined by the excellence of the students rather than teachers" [10]

Let's consider a scenario where a PLE container and its associated ecosystem are developed by some developers/designers from a low power distance society. Their culture may have an impact on the user access restrictions (privacy), which they employ in their system; i.e. who has rights of access and to how much information. The design may include liberal access mechanism if not completely open which may not suit the needs of a high power distance society. The former will most likely want to keep access more transparent with implicit freedom given to everyone to move around the site and the later will most likely aspire a less transparent mechanism.

4 Discussion and Conclusion

The aforementioned text represents some of the cultural aspects that the authors find most relevant and are not exhaustive. The intention was to highlight that there are cultural differences that will have an impact on emerging learning environments in a multicultural setting. One of the limitations in current instructional design models is that they do not fully contextualise the learning experience, and are themselves the products of particular cultures [21]. The actual process of assembling and curating a learning environment itself may not be culturally neutral, but instead based on particular epistemologies, learning styles and goal orientations of the infrastructure, services and content developers.

Therefore it is vital to understand, adjust and propose appropriate pedagogical and technical solutions. Reeves & Reeves [6] introduced the pedagogical dimensions related to cultural sensitivity and the academic community should start looking at this to improve PLE adoption level before the predicted 5 year timeline by the NMC 2012 horizon report [22].

Developers, designers, researchers and teachers should be made aware of the inter-cultural design issues that may arise in a personalized online environment. Instructional designers and academics may sometimes therefore have to incorporate not one, but multiple pedagogies, for example both instructivist and constructivist depending upon the cultures they are providing resources for, and be aware of the multiple ways in which each culture could interpret the instruction and content. This paper has identified some important questions that need to be investigated further and be addressed to better utilize and diffuse PLEs among learner from different cultural backgrounds.

- How can we overcome any cultural bias implicit to PLE infrastructures and associated ecosystems developed within one culture and utilized cross-culturally
- Are PLEs (as conceived by [1], [2]) more suited to individualistic cultures?
- How can the learners (from individualistic cultures) be motivated for group work and learners from collectivist cultures be motivated for taking control on their own learning?
- What about organizational and domain specific cultural impact on PLEs?

'One-size-fits-all' doesn't hold true for eLearning with regard to culture and it is suggested that E-learning in its current form needs to be further enhanced using new and appropriate pedagogies in the context of multicultural educational setting in order

to overcome some of the stated cultural barriers. It may be impossible to find a perfect solution (as evident from the various cultural barriers associated with it) to remove the cultural differences from the E-Learning environments but ensuring cultural sensitivity may help improve adoption among learner with different cultural backgrounds. Theorists have long argued for a cultural dimension in the design process and the need to provide culturally sensitive learning environments [6], [23]. Hence, it can be suggested that PLEs in their current form needs to be further enhanced improving existing pedagogies in the context of multicultural educational setting in order to be culturally neutral and thus help neutralise some of the key cultural barriers.

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