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CULTURALLY INCLUSIVE LEARNING FOR INDIGENOUS STUDENTS IN A LEARNING MANAGEMENT SYSTEM (LMS)

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Executive Summary

A Learning Management System (LMS) such as Blackboard, Moodle and Web City has been utilised for enhancing the quality of learning and teaching in Australian universities. Yet there are no specific university policies and guidelines addressing the *digital divide* in the use of an LMS. In particular, Indigenous cultural values are rarely considered in LMS based learning design. As a result, the equity gap in terms of the quality of learning opportunities for Indigenous students remains unidentified. In this context, this project was aimed at identifying the cultural needs of Indigenous students in the online learning environment and articulating culturally inclusive learning for Indigenous students in an LMS. Based on the literature review in the fields of culturally inclusive learning, online and blended learning, and Aboriginal pedagogy, we created a conceptual framework for culturally inclusive learning with four dimensions: *communication, collaboration, community, and interculturality* that was used in the following three stages: policy and guideline review, quantitative data analysis, and qualitative data analysis.

First, we reviewed the policies and guidelines of Australian universities on cultural diversity (n=30) and LMS learning and teaching (n=10). The review results indicated that the policies and guidelines are aimed at promoting cultural diversity, inclusive teaching, and student equity, but those on an LMS appear to be less important for promoting cultural inclusivity and focus more on facilitation and enhancement of individual students' self-engagement and self-assessment and self-motivated learning. In the LMS policies, we identified that 'communication', 'collaboration' and 'community' are indistinctive, and 'collaboration' and 'community' are vaguely (or too broadly) recognised, and 'cultural diversity and identity' do not appear. Significantly, we failed to find any principles and strategies on an LMS for Indigenous students.

In the stage of quantitative data collection and analysis, second, we randomly selected QUT Blackboard units (n=50) across study areas and evaluated them against how the available functions, features, and tools of the Blackboard units are utilised for each dimension of the framework. The evaluation results indicated that the sites are not exclusive of communication and collaboration, but there is a lack of evidence that they promote holistic, collaborative and community driven learning. For example, only eight out of 50 sites used Discussion Boards, two used Wikis, and none of them used Groups, Blogs, and Journals. The results also indicated that there is a lack of evidence whether any other pedagogical strategies for communication, collaboration, and community other than information dissemination are applied.

In the stage of qualitative data collection and analysis, third, we investigated Indigenous students' and teachers' perceptions and experiences of communication and collaboration in Blackboard units. In doing so, we undertook an online questionnaire with Indigenous students (n=100) and an interview with Indigenous students and staff (n=28, 9 students, 11 academic staff, and 8 professional staff). The analysis results indicated that there is a clear gap between Indigenous students' cultural needs and the current utilisation of Blackboard. The majority of the students appeared to believe that they have not been given an opportunity to use interactive communication tools for human-to-human interaction and they have mostly been encouraged to download given resources and materials. In the interviews with academic staff, we identified that the dominant understanding of Blackboard is *a tool for information dissemination and delivery*. The interview data also revealed that academic staff tend to understand that: (a) their role in Blackboard is an information transmitter; (b) Blackboard is not the best place for culturally inclusive learning; (c) authentic and interactive learning occurs in the classroom; and (d) a top-down approach and one-to-many communication are the most efficient ways of using Blackboard.

In the conclusion of this report, we articulate the ten myths in using an LMS and propose an exemplary LMS design framework for culturally inclusive learning. The students' feedback and the learning designers' advice can be summarised as follows: Teachers' active participation in an LMS is a pedagogical innovation that repositions students as active participants in and co-creators of interactive learning experience. The true benefit of using an LMS in higher education is: Culturally inclusive learning can be achieved by using multiple communication channels that support flexible learning, collaborative learning, and community based learning.

Introduction

Background

It is imperative for Australian universities to create an environment and opportunity where staff and students promote respect and ensure that cultural differences are heard and explored (Universities Australia, 2011; Barker et al., 2009). Online learning environments are no exception. Digital equity must continue as a priority goal of all nations to prevent the development of a permanent underclass (UNESCO, 2014; Resta, 2011). While Australian universities have utilised a Learning Management System (LMS) for diverse learning and teaching modes such as on-campus learning, distance learning, e-learning, and blended learning, university policies on equity, student engagement, and eLearning services are yet to sufficiently reflect the fact that cultural differences significantly influence the quality of interactive learning and the digital divide (Resta, 2011). As a result, while many equity issues have been either resolved or improved, those in an LMS remain hidden and become trapped in the equity gap. In this context, the objective of the project was to analyse Australian universities' policies, procedures, and guidelines for cultural diversity in LMS based learning, particularly university-wide course and assessment design for communication, collaboration, community, and interculturality in line with Indigenous holistic learning. The outcomes are expected to enrich relevant policies and guidelines and use an LMS in a more culturally inclusive way.

Overview of Chapters

This project report is to discuss relevant issues and present the findings in the following six chapters. The first two chapters are dedicated to the theoretical, conceptual, and methodological development of this project. The last three chapters focus on the presentations of analytic and interpretative outcomes and propose pedagogical implications in maximising culturally inclusive learning.

In Chapter 1, we explore theoretical foundations of culturally inclusive learning in a way to address Indigenous cultural values and pedagogical strategies and argue for why cultural diversity and equal participation should not be a subordinate to a dominant culture. Then we review contemporary instructional theories for cultural inclusivity in using an LMS and identify the four dimensions of culturally inclusive learning design in an LMS: communication, collaboration, community, and interculturality.

In Chapter 2, we articulate Aboriginal pedagogy in detail and argue for how the values can be embedded in an LMS. We reveal the metaphysical tensions between Indigenous holistic culture and Western knowledge systems and argue for forming intercultural identity in culturally inclusive learning and building participatory learning community. Such discussion enriches the four dimensions of culturally inclusive learning design and, as a result, we present a conceptual framework that is used for our data collection and analysis.

In Chapter 3, we review 30 universities' policies on culturally inclusive learning and ten universities' policies on an LMS. In particular, we analyse how culturally inclusive learning is understood with identified three categories: Definitions of an LMS, benefits of using an LMS, and pedagogical strategies for LMS based learning. In addition, we interpret how cultural inclusivity is understood in the policies and guidelines on an LMS by applying the four dimensions of culturally inclusive learning design.

In Chapter 4, we present the evaluation results of 50 randomly selected QUT Blackboard units. We undertake our initial evaluation using the four components of Blackboard: Unit Information, Learning Contents, Interactive Communication, and Supplementary Functions. Then we analyse the collected data of each Blackboard unit in line with the four dimensions of culturally inclusive learning design.

In Chapter 5, we investigate stakeholders' (Indigenous students and academic and professional staff) perceptions and experiences of QUT Blackboard units. Based on the results of an online questionnaire completed by 100 Indigenous students, we present their general

experiences of Blackboard and preferences in Blackboard based learning. Through an analysis of open-ended comments on culturally inclusive learning, we also articulate their cultural needs and learning preferences. With the results of interview with nine Indigenous students, 11 academic staff and eight professional staff, we further investigate students' and staff's perceptions and preferences of Blackboard and articulate the gap between the stakeholders.

In the conclusion chapter, we summarise the findings and reconceive them as ten myths in using Blackboard that prevent teachers from using an LMS in an interactive way. Some of them are: University policies do not require teachers to utilise communication and collaboration tools and students prefer to use social media platforms for communication and group work. We unpack these myths and propose an exemplary LMS design framework for culturally inclusive learning that is an enhanced version of the four dimensions of culturally inclusive learning design.

Chapter 1 Culturally inclusive learning and a Learning Management System

This chapter is aimed at providing theoretical foundations for this project. First, we take a look at how the concept of culturally inclusive learning is defined cross literature. Then we articulate its relevant dimensions for LMS based learning design. Last, we review relevant instructional theories in order to discuss a pedagogical integration of cultural inclusivity and an LMS.

1.1 Culturally inclusive learning

Culturally inclusive education is difficult to define because it is differently understood in different contexts. It can indicate: *inclusive education* in special education - the term suggesting exclusion rather than equal participation (Cologon, 2013); *pedagogical inclusion of cultural diversity and multicultural perspectives* in higher education (Quaye & Harper, 2007); *culturally responsive classrooms* where stakeholders acknowledge cultural diversity and find the relevant pedagogical and curricular needs (Jones-Goods, 2015; Montgomery, 2001) and *culturally inclusive pedagogy* that responds to students' diverse learning styles caused by cultural background and its knowledge is context-dependent (Blasco, 2015; McLoughlin, 2001). Synthetically, culturally inclusive learning can be defined as a learning philosophy through which stakeholders recognise, appreciate, and capitalise on cultural diversity in order to promote students' equal participation in teaching and learning. Then, two questions arise which we believe it has rarely been asked and answered in the context of multicultural education: 1) How can cultural inclusivity be paralleled with equal participation if the underlying assumption of the latter is perceived differently within a particular cultural context, and 2) how can teachers and students assure that culturally inclusive learning and teaching appropriately address cultural diversity if an agreed or shared concept of cultural diversity is exclusive of a particular cultural value? These questions indicate the fundamental question of this research project. It is, if culturally inclusive learning should be realised for a particular group of students (i.e., Aboriginal and Torres Strait Islander students) in a new learning environment (i.e., a learning management system), how can we assure that the concept of cultural inclusivity addresses Indigenous cultural values and pedagogical strategies and further the concept of cultural diversity cannot be ideologically subordinate to a dominant culture?

In the literature, equal participation is deemed a parameter of inclusive learning because cultural exclusivity or enculturated exclusion like racism directs structural power relations in communities and generates inequalities in social processes (Cologon, 2013). In this sense, teachers are encouraged to attend all students and involve them equally in all learning activities (Montgomery, 2001). In practice, teachers are required to become culturally responsive and inclusive by "validating students and promoting equity within the classroom" (Jones-Goods, 2015, p. 7) and students are invited to "bring their unique cultural experiences and perspectives to classroom discourse" (Quaye & Harper, 2007, p. 38). Ironically, such strategic understandings of culturally inclusive learning cause a discrepancy with the notion of equal participation defined above in which they do not shift "responsibility for inclusion from the learner to the educational institution" (Blasco, 2015, p. 86) and have little room for consideration of other cultures. This is because equal participation may be predicated upon the responsibilities and roles of individual teachers and students on culturally inclusive learning. This assumption raises an ontological question, how is cultural inclusivity manifest in equal participation?

If we agree to the definition of equal participation for culturally inclusive learning, equal participation should not mitigate cultural differences, but facilitate culture driven participation that is aimed at transforming the institution as well as the individual stakeholders. Unfortunately, the literature we reviewed does not address its ontological understanding of cultural inclusivity. The primary reason we argue here is that they tend to understand (an ethnic) culture and cultural diversity as a subjugated concept of equal participation. In responding to the first question, we need to be aware that cultural inclusivity and equal participation are also socio-cultural products. This means that we need to review those concepts from Indigenous perspectives rather than compel Indigenous learners to accept 'equal participation' without reflection. Otherwise culturally inclusive learning propagates

culture-free individuality in the classroom or becomes an ideological tool for a predominant culture, which causes (unintentional) exclusion of other cultures.

The widely accepted proposition of culturally inclusive learning is to endorse cultural diversity. In the literature, cultural diversity is not clearly defined, but instead refers to “inclusive of all types of diversity” (Germain-Rutherford & Kerr, 2008); “inclusivity and different orientations to learning” (McLoughlin, 2000); “diverse learning styles and cognitive preferences” (McLoughlin & Oliver, 2000); “different cultural and linguistic backgrounds” (Hannon & D’Netto, 2007); “the variety of participants’ cultural backgrounds” (Economides, 2008). Such understandings of cultural diversity in inclusive education are built based on the belief that instructional design should cater for multiple cultural contexts and accommodate learners with different cultural backgrounds (Henderson, 1996). Then we can presume that instructional design for inclusive education relies on a universalist approach that there is a universal framework applicable to all people. Yet, as Gergen (2015) argues, the universalist approach to culturally inclusive learning is not free from an array of traditional assumptions about knowledge, the person, and culture. Gergen criticises a universalist fantasy in cross-cultural psychology and points out a pedagogical issue that the universalist standpoint has been adopted and extended in constructivist cognitive content without addressing cultural particularity of mental life. This is the response to the first question: the notion of equal participation can be differently perceived and understood in different cultures.

Some may argue that our questions on culturally inclusive learning support *cultural relativism*. What we argue for is that cultural inclusivity, equal participation, and pedagogy are cultural artefacts and culturally inclusive learning presumes that those concepts need to be deconstructed and reconstructed from a cultural perspective, which is true equal participation. As Henderson (1996) argues, this means, “multiple perspectives and ways of thinking and doing provide a more complete knowledge base from which to construct an understanding of our environment than any one culture can provide” (p. 90). In other words, those concepts need to be reconsidered with Indigenous cultural values and pedagogical strategies in order to assure that the concept of cultural inclusivity corresponds to Indigenous culture. This could enrich both culturally inclusive learning and Indigenous pedagogy. In this sense, our response to the second question is that cultural diversity should mean neither a collection of cultures nor simple acknowledgement of others, but *intercultural interaction* that needs critical reflection on underlying assumptions of teaching and learning, mostly pedagogical concepts and approaches, from other cultural perspectives.

1.2 Culturally inclusive learning in a Learning Management System

It is known that an LMS enables teachers to deliver flexible and feasible teaching and learning through various synchronous and asynchronous communication tools and spaces (Park 2011; 2014). However, such benefits could turn into barriers if an LMS site is primarily used for information dissemination or as a digital depository (Park, 2014). Such uses can fixate cultural prejudices and stereotypes because students are encouraged to focus on individuals’ information consumption. This means that technology driven instruction is not culturally neutral, but is determined by “particular epistemologies, learning theories and goal orientations of the designers themselves” (McLoughlin & Oliver, 2000, p. 58). Henderson’s (1996) argument is specific:

“... instructional design is an intangible aspect of culture, but once it is transformed into a material object, it becomes (part of) that cultural artifact. Any artifact is a product of the selective paradigms of instructional design. These paradigms are influenced by such things as the instructional designer’s (a) world view; (b) values, ideologies, culture, class and gender; and (c) commitment to a particular design paradigm.” (p. 86)

Likewise, an LMS as an artefact is primarily influenced by the instructor’s cultural perspective and the institutional culture and policy. This implies that research on culturally inclusive learning in an LMS needs to address universities’ policies and stakeholders’ (academics, professional staff and (Indigenous) students) perceptions of cultural inclusivity and experiences of LMS based learning, which will be explored in later chapters. In doing so, we initially define the dimensions of LMS based learning in which cultural inclusivity becomes prominent. In the following table, we present a

summary of various pieces of research that address instructional dimensions for culturally inclusive learning in online learning environments.

Table 1.1 Instructional dimensions for culturally inclusive learning in online learning environments

Dimensions	Literature
(1) Social organisation of the course, (2) Selection of course content, progression, and learning activities, (3) Selection of course materials, (4) Selection of a mode of interaction in the course, (5) Selection of the technological platform supporting the course, (6) Language(s) used in the course, (7) The conditions under which the course is given (entirely distance or a hybrid approach)	Collis, Vingerhoets and Moonen's (1997) seven dimensions of instructional design for culturally inclusive online teaching and learning
Recognising the following four dimensions: (1) Students may adopt different learning approaches and have different levels of prior knowledge, (2) The cultural differences and perspectives that students bring to learning are assets, not liabilities, (3) Setting high expectations and challenges for all students creates a motivating climate, (4) Assessment should be authentic, and include diagnostic assessment, formative assessment and outcome assessment.	McLoughlin's (2007) high level of constructive alignment between learning activities, pedagogy and use of Web tools
(1) Awareness of learner needs and preferences, (2) Communication and social interaction, (3) Authentic task design, (4) Multiple perspectives and access to resources, (5) Scaffolding and support, (6) Flexibility in goals, modes of assessment and learning outcomes, (7) Tutor roles, (8) Collaboration and co-construction, (9) Clear communication of aims, objectives and requirements, (10) Self-direction and integration of skills	McLoughlin and Oliver's (2000) ten culturally responsive Web design principles for planning an online unit for indigenous Australian learners
(1) Pedagogical and psychological, (2) Technical and functional, (3) Organisational and economical, (4) Social and cultural and the following two cultural criteria: (1) Team communication is supported taking under consideration possible differences in religion or in cultural development; and (2) the individuality of each student with regards to his cultural and social development is taken under consideration.	Michailidou and Economides' (2003) four dimensions of the design and development of collaborative educational virtual environments on the basis on different cultures and languages
(1) Pedagogical philosophy, (2) Learning theory, (3) Goal orientation, (4) Task orientation, (5) Source of motivation, (6) Teacher role, (7) Metacognitive support, (8) Collaborative learning, (9) Cultural sensitivity, (10) Structural flexibility	Reeves and Reeves' (1997) ten dimensions of interactive learning on the World Wide Web
(1) How do we integrate and address this multicultural dimension in a distance education course aimed at students who live in diverse cultural environments? (2) How do we facilitate interaction and dialogue among individuals of widely differing cultural influences? (3) How do the challenges of intercultural communication in an online environment affect online teaching and learning? (4) What are the characteristics of an online course that is inclusive of all types of diversity, and what are the guiding principles for designing such courses?	Germain-Rutherford and Kerr's (2008) four questions for designing inclusive learning online environments

Such diverse instructional dimensions indicate that students' various learning needs and styles in line with their cultural values have to be embedded in LMS design, the instruction, and the role of teachers and students, which also needs institutional support. The above six models also imply that an LMS should be used to facilitate communication and collaboration in terms of intercultural interaction. To do this, there are two more domains revealed through literature review other than communication and collaboration. Those are *community* and *interculturality*.

First, *Community* is the key concept and has to be pursued for culturally inclusive learning in online learning environments. The concept of community raises a tension between diversity of student cohorts and localisation to accommodate students' cultural needs. According to McLoughlin and Oliver (2000), the tension causes two levels of learning design: namely, a macro level of instructional design and a micro level of instructional design. A challenge to culturally inclusive learning always occurs at a macro level. When Indigenous students undergo a change in cultural practices due to cultural exclusivity in an online learning environment, they will perceive themselves as being on the periphery. To avoid such marginalisation, McLoughlin and Oliver (2000) recommend, "systematic attention must be given to particular design guidelines, which include responsiveness to learner needs, community based learning and cultural contextualisation of learning activities" (pp. 58-59). In practice, many educators adopt Lave and Wenger's (1991) *communities of practice* (CoP) model (McLoughlin, 2007). In particular, the concept of *legitimate peripheral participation* (LPP) of CoP model is known as efficient in responding to a micro cultural level of instructional design in online learning environments (McLoughlin, 2007). LPP is adopted to support the concept of community or community based learning and it refers to the way a learner gains access to new learning contexts through a process of incremental engagement and participation from non-membership, peripheries, to full membership of learning contexts. A practical use of LPP in an online learning environment can be found in Park's (2015) study. He argues that a sense of belonging and ownership has to be embedded in a collaborative learning context to create a sense of community. He explains the reason that "student engagement in online learning can involve decentralised content (e.g. student-generated content), tasks (e.g. blogs) and assessment (e.g. peer review), and converges on multiple interaction with peer students" (p. 390). He argues that we need to presume an LMS as an interactive learning space for intercultural interaction where cultural formation and knowledge co-construction occur, which captures CoP. In this sense, the instructional design is highly related to interculturality in which intercultural interaction requires students to build intercultural identity to participate in communication and collaboration.

In a culturally diverse learning environment, second, the instructional design focuses on the formation of interculturality or intercultural identity because it is also a social and cultural artefact (Henderson, 1996). In particular, minority cultures can reshape cultural contextuality as a variable of consequence in online learning (Henderson, 1996). To Lave and Wenger (1991), we conceive of interculturality as cultural identity through participation in communities of practice and "identity, knowing, and social membership entail one another" (p. 53). In a culturally diverse context, cultural identity is used as a reference to collective self-awareness because culture incorporates one's worldview and value system (Adler, 1977). This means that culturally inclusive learning should be aimed at disclosing our unintentional marginalisation of other cultures by disclosing cultural identity embedded in a predominant culture. To Stedman (2002), cultural identity is a crucial component of place attachment in which it shapes a bond between people and their environment. It can be defined as an interpretation of self as a locus of attachment. This means that stakeholders' attempt to build intercultural identity affects attitude-behaviour relationships that construct new common meanings and collective identity and exert new behavioural intention of continuing engagement and participation in learning community (Stedman, 2002). This implies that culturally inclusive learning is aiming at not only disclosing understanding of the current cultural identity, but also providing stakeholders with an experience of forming intercultural identity, which results in building and empowering culturally inclusive learning.

The literature shows that the key domains of culturally inclusive learning build a participatory community through communication and collaboration that should conceive of the formation of intercultural identity. Learning components such as learning objectives, learning resources, activities (individual and group), assessment, and instruction, and communication and collaboration tools of an LMS need to be designed to facilitate intercultural interaction towards intercultural identity. In this sense, communication and collaboration are pedagogical approaches to culturally inclusive learning, whereas community and interculturality are conceptual understandings of culturally inclusive learning. The latter ones need to be further explored in line with instructional theories in order not to be trapped or restricted by either universalism or cultural relativism.

1.3 Intercultural identity and instructional theories

A dominant instructional theory of culturally inclusive learning is *constructivism* as seen in Table 1.1 above. For example, McLoughlin (2007) argues that cultural experience and authentic experience can be best integrated with curricular when constructivist approaches are applied. Henderson (1994) also stresses that culturally inclusive learning needs a combination of objective and constructive, behavioural and cognitive, and abstract and concrete and yet ultimately it should be aimed at realising a constructivist paradigm. With their endorsement of Vygotsky's (multi-cultural) zones of (proximal) development, both McLoughlin and Henderson investigate the pedagogical dimensions for cultural differences and propose the principles for designing culturally inclusive learning in online learning environments (refer to Table 1.1). The principles can be summarised with McLoughlin and Oliver's (2000) words, the aim is to "minimise deficit views of cultural difference, while promoting constructivist, contextualised, culturally responsive learning" (p. 64). For McLoughlin and Oliver, cultural inclusivity refers to high level learning in alignment with the four elements - learning activities, teaching and support processes, learning outcomes, and assessment - of an inclusive curriculum. In an online learning environment, they argue that the four elements need to be carefully designed to reflect two domains: knowledge-building community and use of collaborative communicative tools. For constructivists, thus, culture is not a noun, but a verb that it is constantly constructing itself (Germain-Rutherford & Kerr, 2008).

Knowledge construction is an active, meaning-making process through interaction with the social world. Cognitive constructivists focus on individual learners' cognitive adaptations to environments (e.g., Piagetian schema – mental representations of objects and events in the physical world through adaptive function of cognition). On the other hand, socio-cultural constructivists hold the belief that children development is "the result of social learning through internalisation of culture and social relationships" (e.g., Vygotskian cultural-historical theory) (Hamza & de Hahn, 2012; Dahms et al., 2007, p. 1). Social interaction occurs within cultural contexts, and knowledge is constructed in social interaction. A radical constructivist, von Glasersfeld (2005), argues that knowledge is not an independent reality, but a social entity that is shared among members. The reason why he proposes a radical version of constructivism is that he believes that many constructivists and followers do not have intention of changing their epistemologies while advocating constructivism. In other words, constructivists in education tend to believe that knowledge has to be a representation of reality rather than socially accepted and shared notions (Boudourides, 1998). The epistemology of constructivism is significant for culturally inclusive instruction design in which the role of teachers and students becomes clear, which has been missed or ignored by many constructivists in education.

Knowledge construction by an individual learner's adaptive cognitive process occurs through external events, which represents Piaget's term, collection of conceptual structures (Boudourides, 1998). Piaget's four major periods of development in the evolution of human mind (sensorimotor, pre-operational, concrete-operational, formal-operational) indicate how mental development organises various schemes in increasingly complex and integrated way (Piaget, 1953; 1970; 1980). On the other hand, Vygotsky's (1981) knowledge construction is "the process of knowing is (rather) a disjunctive one involving the agency of other people and mediated by community and culture" (Boudourides, 1998, para. 25). Vygotsky's (1978) zone of proximal development (ZPD) is often understood as a scaffolding teaching strategy, which should not view ZPD as an attribute of children, but, as Corden (1992) and Hammond and Gibbons (2001) also point out, an attribute of learning interaction. In this sense, von Glasersfeld (2005) argues that learning is regulated by social and cultural contexts so that knowledge cannot be an independent reality. Vygotsky's and von Glasersfeld's understandings of culture indicate that a flexible and accessible learning framework is necessary to accommodate cultural diversity, while Piaget's concept of knowledge implies that culture is a collection of conceptual structures that develops our habitual mind.

Such constructivists' epistemology presumes that knowledge is not a representation of essential reality, but "the result of an individual subject's constructive activity" (von Glasersfeld, 1990, p. 37). Thus "learning is the product of self-organisation" (von Glasersfeld, 1989, p. 136). In this sense, knowledge "somehow resides outside the knower and can be conveyed or instilled by diligent

perception or linguistic communication” (von Glasersfeld, 1990, p. 37). In practice, teachers are required to introspect their own cultural perspectives and have “an adequate model of the conceptual network within which the student assimilates what he or she is being told. Without such a model as basis, teaching is likely to remain a hit-or-miss affair” (von Glasersfeld, 1989, p. 136). In culturally diverse learning environments, thus a pedagogical concern is not offering group learning with the teacher’s little or no interference, but understanding how cultural epistemologies affect group learning and knowledge construction. This implies that teachers and students are participating in creating various forms of ZPD based on quality of socio-cultural interaction. This requires revealing the perceptual gap between Indigenous students’ cultural needs and pedagogical strategies in an LMS, which we will explore in later chapters.

This chapter provided conceptual and theoretical foundations for this project. We reviewed the position of culture in culturally inclusive learning in line with the concepts of equal participation and cultural diversity and argued that those concepts are socio-cultural products. This understanding helps exercise constant vigilance against individuals’ value-free conducts that serve for the dominant culture and exclude other cultures. We identified the four dimensions of culturally inclusive learning design: communication, collaboration, community, and interculturality. The dimensions need to be considered in designing an LMS to support and realise cultural inclusivity. Consequently, components of an LMS need to be reviewed from perspectives of Indigenous culture, which should be the first step for culturally inclusive learning.

Chapter 2 Cultural inclusivity of Aboriginal pedagogy

In this chapter, we will articulate Aboriginal pedagogical strategies in line with their holistic cultural characteristics and argue how pedagogical values can be embedded in LMS design. We will also propose a conceptual framework that enriches the four dimensions of cultural inclusivity in online learning environments: communication, collaboration, community and interculturality. By using the framework, we will review the current policies and evaluate LMS units in next stages.

2.1 Aboriginal holistic pedagogy

Holism is used to understand underlying philosophy of Aboriginal pedagogy. It is often assumed that it breaks binarism of Western pedagogy (precisely objectivist pedagogy). Holistic pedagogy is aimed at facilitating interpersonal communication and collaboration in learning that refers to an Aboriginal pedagogical strategy *community links*. It undermines egocentric, task-focused, and grade-oriented learning. Aboriginal cultural metaphysics is clearly presented in Aboriginal *Dreaming*. In *Dreaming*, humans and nature are interconnected in the past, present and future and the interconnectedness can be both a temporal state and a place, through which the profane and the holy are constantly commingled and interwoven (Dean, 1996; Griffin, 2003). This spiritual connectedness prioritises community (or collective will) over individuals and the former takes care of the latter. Community does not refer to local institutions or neighbourhood, but collectivistic consciousness that is a shared belief of *responsiveness* and *connectedness* to a collective whole (Dumont, 2005).

Western education systems typically use instructional methods that students perceive a structural distinction between language/society/culture. Thus, knowledge construction means that individual students' capabilities of critical, creative and analytical thinking, and problem solving are applied in the natural world (Rasmussen, Baydala, & Sherman, 2004). In the concept of collectivistic consciousness, on the other hand, such distinctions are only effective when each capability is aligned with *community links*. An Indigenous researcher, Yunkaporta (2010) interprets its pedagogical meanings: "This way of learning draws together the research describing Aboriginal pedagogy as group-oriented, localised and connected to real-life purposes and contexts" (para. 5). Yet we need to be aware that it should not be understood in parallel with his other Aboriginal pedagogical concepts such as story-sharing, non-linear, learning map, deconstruct/reconstruct, symbols an images, and non-verbal because community links contains an emergent whole. For example, we tend to think that we fully understand the entire ecological system *per se*, but often forget that the system continues to determine our thinking. To understand the system, what we only can do is to continue to understand it because we are part of it. We tend to think that we build or participate in building a *community*, but in reality the *community* builds us to be agents of *the community*. This metaphysical approach helps understand the rest Aboriginal pedagogical strategies in a holistic way. For example, *land-links* is often understood as a connection between land and knowledge, yet its underlying value is not knowledge construction *per se*, but agents' transformation of their own thinking and perception through sharing activities towards collectivistic consciousness, which is "not constrained by the serial and sequential nature of verbal thinking" (Gibson, 1993). This means that we should not understand Aboriginal pedagogical strategies as independent concepts, but within the concepts of *interconnectedness* and *interrelatedness*, which is holistic pedagogy.

Indigenous *interconnectedness* and *interrelatedness* are well pedagogicalised in *Durithunga* (literally means "growth"), a yarning circle. "Durithunga is about community connections in education and the need to always seek and develop these in relation to Indigenous educational equity" (Davis, 2012, p. 165). A yarning refers to a process that there is no beginning and no end. In an educational setting, a non-linear characteristics tends to resist individual competition and thus equalises power imbalances and offers strength-based approaches to participants (Davis, 2012). If we understand Indigenous *land-links* as a spiritual connection between people and deities residing in landscape, plants, and animals, we omit its underlying concepts: *embodiment* and *re-incarnation*. First, Indigenous landscape features refer to either the embodiment of the deity itself or the physical vestiges or psychological status of the deity (Grieves, 2009). The embodiment is pantheistic in which a particular landscape feature represents a deity, which holds the universe, the profane and the holy

are constantly interacting with each other (Griffin, 2003) and integrate the past, present and future through relationships (Grieves, 2009). Second, human beings are interchangeable with animals and plants through re-incarnation of the spirits (Dean, 1996). The re-incarnation represents Aboriginal cosmology that interconnectedness and interrelatedness operate as “synchronic, omnipresent and phenomenologically more substantial than the rectilinear chromos of the personal lifeline” (Griffin, 2003, p. 62). The embodiment and the re-incarnation are underlying values of Aboriginal pedagogy that resist atomistic, dualistic and sequential thinking and promote relational, holistic, non-linear thinking. In this way, a yarning circle represents “a way (*our way*) to re-connect and remember that we must first draw strength from our collective spirits and identities before we go about business” (Davis, 2012, p. 173).

Aboriginal pedagogical strategies are often symbolised through tables, diagrams, and charts, which is a Western way, that are contradictory to Durithunga principles of yarning circle (Davis, 2012). No further explanation and clarification on the assertion was found in the literature, but the contradiction should indicate that the Western way tends to perceive Durithunga as one of pedagogical tools rather than understand how ‘the way’ determines communication and collaboration to create a sense of collective consciousness and a spiritual sense of community. This interpretation implies that Aboriginal holistic community and Western concept of community are fundamentally different in which the latter conceptualises the rules of community and the former decontextualises and recontextualises ‘our being’ into community. It can be said that the latter is an ontological modality driven, whereas the former is an epistemic modality driven. Then how to embed Indigenous pedagogical values in Western educational systems and is this really possible?

2.2 Embedding Aboriginal values in a Learning Management System

Embedding Aboriginal and Torres Strait Islander perspectives in schools: A guide for school learning communities (EATSIPS) was released by Department of Education and Training, Queensland Government in 2011. It is a framework for supporting change in schools by creating a cultural space, called “the third cultural space” (p. 9). The space “represents a new way of working” that “builds bridges between the Indigenous and Western knowledge systems to achieve meaningful outcomes for Indigenous students in particular but all students in general” (p. 9). The EATSIPS guide defines Western knowledge as scientific and disciplinary and Indigenous one as responsive, active ecological. When both are acknowledged and valued *equally*, the framework indicates that the overlapping of views represents the *third cultural space*. Davis and Grose (2008), who is the primary reference of the EATSIPS, claim that the third space is the process of Durithunga, a yarning circle that represents “a collective of identities dealing with and advocating for better outcomes in Indigenous education” (p. 7). They argue that effective teaching and learning processes (or building a third cultural space) need to encapsulate the perspective that is to “remember(ing) the power of Indigenous culture and identity, rich with survival skills and strong connections to kin and country” and “hold Durithunga forums as students, staff and community” (p. 7). In other words, Indigenous and non-Indigenous participants identify a problem and try to resolve it based on a holistic approach that creates a space for deep reflection. To Davis and Grose, such a holistic approach refers to “a three-way process” that allows participant being connected to community via *Face*, *Space* and *Place*:

“*Face* is recognising the face, connecting to Indigenous people and building relationships. *Space* refers to a site, such as a physical space for the Knowledge House and allowing the space for Indigenous curriculum, identify and processes to be infused throughout the school community. *Place* means understanding and responding to the place from which Indigenous young people are coming.” (Davis & Grose, 2008, p. 15)

Eventually, the third cultural space is to develop a new classroom ethos through building a partnership and changing perceptions of and attitudes towards Indigenous people or each other. *Face*, *space* and *place* refer to a cognitive and social, physical and behavioural, and emotional and spiritual change, which is a change of an entire school across four key areas of professional and personal accountabilities, community engagement, organisational environment, and curriculum and pedagogy (Department of Education and Training, 2011). In particular, a change of pedagogy and assessment is the key to culturally inclusive classroom in line with school ethos and community partnership. The EATSIPS does not present any specific instructions,

but propose a planning guide with four stages of curriculum intent, pedagogy, assessment, and reporting based on student needs and prior knowledges:

Curriculum intent: What do we want students to learn?

Pedagogy: How will we teach it so all students will learn it?

Assessment: How will they show what they know and how will we find out if they've learned what we wanted them to learn?

Reporting: How do we communicate what they have learned and how well they have learned it? (Department of Education and Training, 2011, p. 49)

In addition, their proposed principles of curriculum change are “(a) learning environments that value and respond to diversity, (b) use of a range of resources appropriate to students’ learning needs, and that reflect students’ identities, and (c) relationships and behaviours between students, and between teachers and students, that are fair and respectful” (p. 29). These principles and the planning guide explicitly highlight the importance of holistic approach to these changes and its ultimate goal is, “Whole-school mapping to see where Aboriginal and Torres Strait Islander perspectives were included” in the curriculum intent and pedagogy as enacted curriculum (p. 48). A metaphysical concern here is that it seems the EATSIPS does not promote building a third cultural space with Western knowledge, but campaigns for a new cultural space that emerges when Western knowledge is inclusive of Aboriginal one, not *vice versa*. In practice, in other words, components of a lesson such as assessment, pedagogy, and activities, resources, need to be re-designed in a way to reflect Indigenous values and perspectives. For Indigenous students, then learning becomes a privilege while a right for Western ones. Such a metaphysical tension raises a doubt as to how a third cultural space can be achieved or realised without resolving that tension. The EATSIPS shows that Indigenous knowledge only can be applicable to third cultural space building, which presumes that it is ontological to learning and knowledge construction, while Western one remains epistemic. Unless the metaphysical tension is resolved in the EATSIPS framework, the third cultural space may remain a myth. This is the reason why we need the fourth dimension, interculturality.

As argued in the previous chapter, interculturality or intercultural identity needs to be conceived based on participatory learning community through intercultural communication and collaboration. The metaphysical tension, which Indigenous values are ontological whereas Western ones are epistemological, needs to be approached in terms of *culture’s ongoing process of self-constructing*. This means that interculturality needs to be shaped by new values that reflect Aboriginal ontology and is accessible from Western epistemology. Such an axiological aspect of intercultural interaction needs to be shared at the beginning of any EATSIPS planning and remains open to further development while the embedment is taking place. In other words, ontological, epistemological and axiological aspects of culturally inclusive learning need to be formed as a conceptual framework that offers hypothetical questions to each dimension of culturally inclusive learning in evaluating and designing learning components. Otherwise, the embedment brings about no changes of either culture or relies solely on Western tolerance for privilege, thereby aggravating ‘othering’ as the institution and environment yet to be changed.

2.3 A conceptual framework for culturally inclusive learning in a Learning Management System and its hypotheses

By applying the three metaphysical aspects, hypothetical questions were created for each dimension. First, ontological questions are built based on the concept of holism that each dimension is facilitated in a way to acknowledge various forms of human-to-human relationships in terms of interconnectedness and interrelatedness. Second, epistemological questions of each dimension focuses on epistemic processes and learning goals rather than contents and learning outcomes. Epistemic processes are associated with metacognition that consists of learner’s co-construction of knowledge and experience, whereas learning goals refer to pedagogic processes rather than knowledge acquisition and preservation. Third, axiological questions are associated with intercultural interaction that articulates the diversity of

worldviews and the formation of intercultural identity. The following table shows that each dimension has hypotheses of ontological, epistemological and axiological understandings of cultural inclusivity in an LMS.

Table 2.1 The dimensions of culturally inclusive learning in an Learning Management System and the hypotheses

Dimensions	Hypotheses: An LMS unit
A. Communication	<p>A-1 Does reflect the pre-existing relationships between students or encourage students to understand the power of the relationships.</p> <p>A-2 Does facilitate students' deep engagement in and critical understanding of learning with others.</p> <p>A-3 Does support students to be aware of a new perspective(s) of their diverse thinking and behaviours.</p>
B. Collaboration	<p>B-1 Does provide an opportunity for students to identify their connectedness and relatedness of the task to peer students.</p> <p>B-2 Does offer various collaborative models that could influence not only effective problem solving, but also different approaches to problem seeking.</p> <p>B-3 Does encourage students to create a new partnership/s with peer students or to think of a new vision for the group as a whole.</p>
C. Community	<p>C-1 Does articulate how 'you', 'I,' and 'us' are interrelated and interconnected to shape collective consciousness.</p> <p>C-2 Does offer various methods to have access to various forms of knowledge that are shaped by different cultural and social aspects.</p> <p>C-3 Does encourage 'us' to think of our contributions to the learning community and our active participation in intercultural interaction that create new values for interculturally interactive community.</p>
D. Interculturality	<p>D-1 Does acknowledge the diversity of cultural identities and how they can be interacted with each other.</p> <p>D-2 Does offer an opportunity for students to construct new knowledge based on an understanding of cultural diversity and inclusivity.</p> <p>D-3 Does explore intercultural identity and/or new values for interculturally interactive community.</p>

The hypotheses of each dimension is used as a guide to develop a survey questionnaire in line with functions and tools of a targeted LMS in this project and indicative interview questions in line with interviewee's personal and professional experiences of cultural inclusivity in the LMS. The following table is an example for reviewing questions on the policies and strategies used in this project.

Table 2.2 The review questions for cultural diversity and inclusivity on policies

Dimensions	Hypotheses	Review questions
A. Communication	A-1 The pre-existing relationships between students and the power in communication A-2 Deep engagement in and critical understanding of learning with others A-3 Being aware of a new perspective of students' diverse thinking and behaviours.	A'-1 Does it address the relationships between students who have culturally and linguistically diverse backgrounds? A'-2 Does it articulate the importance of intercultural communication and interaction between students who have culturally and linguistically diverse backgrounds? A'-3 Does it promote culturally inclusive values for intercultural communication and interaction between students who have culturally and linguistically diverse backgrounds?
B. Collaboration	B-1 Connectedness and relatedness of the task to peer learners B-2 Various collaborative models for problem-solving and –seeking B-3 A new partnership with peer learners or a new vision for the groups as a whole	B'-1 Does it acknowledge the diversity of collaboration models depending on diverse cultural assumptions? B'-2 Does it address how cultural diversity has an impact on collaborative processes and what knowledges are supposed to learn? B'-3 Does it articulate a collectively shared value(s) that all students can pursue?
C. Community	C-1 Interrelatedness and interconnectedness that shape collective consciousness C-2 Various forms of knowledge shaped by different cultural and social aspects C-3 Contributions to the learning community through intercultural interaction and creation of new values	C'-1 Does it articulate the existence of diverse communities in the learning community? C'-2 Does it suggest how culturally diverse communities or culturally different groups can interact with each other in the learning community? C'-3 Does it address what values each cultural group can create or pursue for intercultural interactive community?
D. Interculturality	D-1 Interaction between cultural identities D-2 New knowledge of cultural diversity and inclusivity D-3 Intercultural identity for intercultural interactive community	D'-1 Does it acknowledge interculturality that determines our thinking and behaviours? D'-2 Does it indicate a way of constructing cultural identity and cultural diversity? D'-3 Does it promote creating intercultural identity for culturally diverse community?

Chapter 3 Policies and guidelines of Australian universities on culturally inclusive learning and a Learning Management System

In this chapter, we present our review outcomes of Australian universities' policies and guidelines on culturally inclusive learning (Section 3.1) and an LMS (Section 3.2). We searched the websites of 40 Australian universities using keywords for culturally inclusive learning such as: 'culturally inclusive learning/teaching,' 'culturally inclusive classroom/practice/pedagogy,' 'cultural diversity,' and 'inclusive learning.' The keywords to search LMS policies were 'Learning Management System,' 'Blackboard,' 'Moodle,' 'Web City,' 'LMS policies,' and 'eLearning/distance/online learning.' Among 40 Australian universities, we were able to find policies on culturally inclusive learning in 30 universities' websites and policies on an LMS in ten universities' websites. By using the four dimensions of culturally inclusive learning presented in the previous chapter, we reviewed and analysed how culturally inclusive learning is understood and whether this understanding is linked to their current LMS policies and guidelines. We also reviewed how cultural inclusivity, particularly being inclusive of Indigenous students, is reflected in their LMS policies, strategies, and/or manuals. The results showed that all Australian universities have policies on *culturally inclusive environment* (or *culturally inclusive practice* or *culturally inclusive environment classroom*) and they tend to emphasise the acknowledgement of cultural and linguistic diversity/differences and the importance of intercultural communication/interaction in the classroom. Yet, we found the fact that the policies are not directly linked to the LMS strategies and guidelines.

3.1 Universities' policies on cultural inclusivity

According to our analysis of the policies on culturally inclusive learning, most universities have two different areas of activity relevant to cultural diversity: One is on 'equity (staff employment, responsibility, disability)' and the other is on 'effectiveness/engagement for all students (teaching and learning)'. This project focuses on the latter to address the former.

Some universities directly use Hockings' (2010) quote below to define the meaning of inclusive learning and teaching in their policies. Other universities appeared to present their own definition as a similar meaning of Hockings' definition. The definition is:

"Inclusive learning and teaching in higher education refers to the ways in which pedagogy, curricula and assessment are designed and delivered to engage students in learning that is meaningful, relevant and accessible to all. It embraces a view of the individual and individual difference as the source of diversity that can enrich the lives and learning of others." (Hockings, 2010, p. 1)

Flinders, RMIT, Deakin, and Wollongong directly adopt the quote. Some others such as UNSW, Griffith, and UniTAS reword and contextualise it. For example:

"... inclusive practice is the use of interactive strategies that acknowledge and value cultural diversity." (UNSW)

"... a culturally inclusive classroom is one where students and staff alike recognise, appreciate and capitalise on diversity so as to enrich the overall learning experience. Fostering a culturally inclusive learning environment encourages all individuals to develop personal contacts and effective intercultural skills." (Griffith)

"... all adopting an inclusive approach to teaching means: a) recognising, accommodating and meeting the learning needs of all our students, b) acknowledging that our students have a range of individual learning needs and are members of diverse communities, and c) avoiding pigeonholing students into specific groups with predictable and fixed approaches to learning." (UniTAS)

“... inclusive teaching and learning refers to the ways in which the Deakin University community creates a meaningful and embracing environment for all its students, in all modes – cloud, campus or converged.” (Deakin)

“... a culturally inclusive environment requires mutual respect, effective relationships, clear communication, explicit understandings about expectations and critical self-reflection.” (USC)

“... inclusive curricula and teaching in higher education is defined as an approach to course and unit design and to teaching and learning practice which aims to improve access and successful participation of groups traditionally excluded from tertiary education.” (SCU)

The policies focus on Indigenous and international students (often), and disability (sometimes) in their understanding of culturally inclusive teaching and learning. They also articulate that individual students have different cultural and linguistic background and emphasise that the university should understand individual students' diverse cultures and consider individuals' needs for engagement and effective learning. This is conceptually aligned with Hockings' definition in which (cultural) diversity emerges from individual differences and individuals are categorised by individual's socio-cultural backgrounds including ethnicity, religion, language, gender, geographic location, age, and physical and social status. A typical example can be seen in RMIT's understanding:

“Students bring with them a wide variety of variables. You may find in your program and your individual classes that these variables or dimensions may include, but are not necessarily limited to, age, gender, life experience, nationality, cultural and linguistic background, sexuality, religious practice, health and medical conditions, disability, citizenship status and financial situation.” (RMIT)

Such an 'individual differences' approach was also found in the definitions of 'cultural diversity.' A document, *Culturally inclusive environment information folio* used by many universities (e.g., USC, Flinders, Curtin, UQ, and UWA) indicates, “Cultural diversity is commonly interpreted in relation to ethnicity. However the term should be understood within a broader context where it recognises the unique attributes of all persons.” In this sense, those universities articulate a concept of a *culturally inclusive university* that can be summarised in the following three aspects:

1. Individual students can participate fully in classes, aim to study better, aim to achieve better academic results, experience less stress and have enhanced career prospects.
2. All staff can interact more fully with other staff and students, and can extend and develop their own cultural awareness.
3. The university as an organisation benefits from culturally diverse staff and students through exposure to alternate perspectives and experiences.

The 'individual differences' approach becomes more specific among the role of stakeholders of a university: 'Individual' students' full participation in learning, 'individual' staff's own cultural awareness, and university's acceptance of alternate perspectives and experiences from culturally diverse 'individual' staff and students. On the policies and relevant strategic documents, Australian universities tend to stress the responsibilities and commitments of three areas: Organisational culture and environment, teacher and student roles, and curriculum, that are supposed to support the 'individual differences' approach to cultural diversity.

Every university highlights 'Organisation culture and environment' for culturally inclusivity, especially, the need of support. For example, “staff and students are aware of their rights to have their cultural identity respected and to be free of discrimination ... have an individual responsibility to ensure that their interactions and activities with cultures, other than their own, affirm diversity” (QUT MOPP A/8.7 *Cultural diversity and anti-racism policy*). The environment for cultural diversity is an extension of an individual's ability to develop social relationships and participate in cooperative work (conversation, discussion, and teamwork). In a university context, staff and students experience cultural

differences/diversities at meetings, social events, and celebrations and they need to be aware of what appropriate behaviour is or what inappropriate behaviour is. For example:

“Discussions, problems in table groupings: Activities which are based around table groupings work well in tutorials and workshops. For most people, contributing to a table discussion is far less intimidating than contributing to a whole class discussion. It is useful to provide guidelines to ensure that everyone at the table has the chance to contribute to discussion.” (UTS)

“Social relationship – Positive relationships are the basis of all harmonious productive education and work settings. It is important in these contexts for respectful relationships to be maintained and for people to work cooperatively to deal with incivilities.” (Flinders)

“Respectful relationships – Apart from avoiding the occurrence of disrespectful behaviours, engaging in respectful relationships means demonstrating a positive appreciation of people and their cultural values. Respectful relationships extend beyond individuals to include aspects of special significance to particular cultures. For example, in the case of Indigenous Australians, this includes respecting their history of Australia, which is an alternative perspective on "white" history.” (UNSW)

In practice, “The University strives to create an environment where staff and students promote culturally inclusive behaviour and activities, ensure cultural differences are heard and explored, and actively seek to learn from other cultures” (Melb, *Valuing diversity*). In the classroom, interaction has to be designed to respond to cultural inclusivity, “A degree of formality in class is important because students need to trust and respect teachers as they are the experts who will ultimately assess and grade student work” (UQ, *Designing culturally inclusive environments*). A culturally inclusive classroom needs to have clear “academic expectations and standards,” “behavioural and language expectations and equal opportunity,” “the format and purpose of the particular session type and the types of participation,” “topic outlines, objectives and outcomes,” “relevant information and resources sessions,” and “communicating information and ideas or language accuracy and referencing and plagiarism” (UNSW, *Culturally inclusive practice*; UQ, *Designing culturally inclusive environments*). In this understanding, “the role of the teacher is to provide disciplinary expertise and to cover all the skills and knowledge that students are required to learn” whereas, “students are expected to develop their own ideas by questioning and critiquing what teachers present in class” (UQ, *Designing culturally inclusive environments*). Such culturally inclusive classrooms and the roles of teacher and students need to be supported by and realised in a curriculum. Australian universities present requirements for an inclusive curriculum and LaTrobe articulates such a curriculum as parts of *good teaching*:

- “Recognises that prior experiences inform students' expectations, and experiences of the course;
- Acknowledges and values the culture, background and experience of all students;
- Is inclusive of gender, cultural and socioeconomic background, age, sexuality, and differences related to ability and disability;
- Is responsive and gives expression to the knowledge base of the students and staff in teaching and learning;
- Acknowledges that any curriculum decision is a selection rather than a complete 'truth';
- Makes explicit the rationales underpinning course design;
- Makes clear the goals and standards, which include the key ideas or concepts of the discipline and the ways of arriving at an understanding of that discipline; provides fair access to and distribution of resources.” (LaTrobe, *Developing inclusive curriculum*)

There are “a range of diversity issues in university teaching and learning contexts relating to race, gender, age, ethnicity and cultural background, physical attributes and abilities and their [academics'] attitudes towards diversity” (LaTrobe, *Developing inclusive curriculum*). This means that there are clear gaps between teachers' pedagogical preferences and students' cultural backgrounds, which influence students' perceptions of cultural inclusivity.

In this sense, the teacher needs to be aware of his/her own cultural assumptions and values while managing diversity in an equitable way. Griffith's strategies for a culturally inclusive teacher are specific:

“Communicate to your students that you are committed to understanding cultural differences and understanding your own assumptions, values and beliefs associated with diversity. This sends a message to students that culture is valued and respected in the classroom ... At the start of each semester, provide students with some information about your teaching style and instructional methods, perhaps on lecture slides or on your own website. Include details of your cultural background and any cross-cultural teaching, learning or research experiences you have had.” (Griffith, GIHE Good Practice Resource Booklet – *Designing Culturally Inclusive Learning and Teaching Environments - Classroom Strategies*)

A practical self-awareness process is available in QUT's *Cultural Responsive and Inclusive Practice*. Although it has been developed for student practicum in social work and human services field, its reflection process with four stages (4Rs): reporting & responding, relating, reasoning and reconstructing, can be applicable to teachers in which its activity is aimed at exploring culturally responsive and inclusive practice:

- Reflect on understanding of culture? What does it mean to you? How does your understanding impact your practice?
- Reflect on how you demonstrate culturally inclusive practice? What are the skills/knowledge and values involved?
- Reflect on an interaction with a client where you felt there may have been a conflict of cultural values/beliefs? How did you respond? What did you learn? How does this impact your future practice?
- Reflect on your understanding of Aboriginal and Torres Strait Islander people and their culture? Where did your understanding come from? How does this impact on your practice?
- Reflect on how your agency context engages their clients? How effective is this approach in being inclusive? What strategies could be suggested to improve the accessibility of the agency's services to a diverse range of clients?

As seen in Griffith's *Designing Culturally Inclusive Learning and Teaching Environments*, the assumption of 'communication' in cultural diversity is an individual's self-awareness of cultural differences that requires an understanding of his/her own assumptions, values and beliefs associated with cultural diversity. In doing so, as shown in QUT's *Cultural Responsive and Inclusive Practice*, such a reflective process needs to be conducted by each stakeholder. However, it seems teachers and institution leaders are exclusive from this reflection. Furthermore, it is unclear as to how individuals can achieve self-awareness of their own culture and cultural diversity and how they can participate in cultural diversity. This lack of clarity implies that the individual differences approach tends to emphasise (student) individuals' ability to communicate with others and engage in a context of cultural diversity, whereas it misses the fact that 'self-awareness' can be differently understood and practised in a different culture. In practice, if an individual has no ability of such self-awareness or has not been given an opportunity to develop it, what would be an alternative? In particular, how can the teacher integrate such cultural self-awareness in his/her LMS design?

3.2 Universities' policies on a Learning Management System

Using keywords (LMS, Blackboard, Moodle, LMS policies, eLearning, Distance learning, Online learning), we searched 40 Australian universities' websites and found relevant policies and/or guidelines on their LMS in ten universities' websites (Table 3.1). We could not find specific policies and guidelines on LMS in the rest 30 Australian universities. A desktop analysis was undertaken on those publicly available statements only and as such our results do not authoritatively indicate that the remaining 30 universities have no policies or guidelines on their LMSs. Consequently, we analysed the ten universities' policies and guidelines using the four dimensions of culturally inclusive learning (Table 2.1 and 2.2). The results indicated that six universities include the communication dimension, three universities have the collaboration dimension, two universities present the community dimension and none of the universities

have the interculturality dimension. Note that this does not mean the policies do not reflect the literal means of communication, collaboration, community and interculturality. Rather the meanings of the terms are mismatched with what we propose.

Table 3.1 Ten Australian universities’ policies and guidelines on an LMS

University	Dimensions											
	A Communication			B Collaboration			C Community			D Interculturality		
	A-1	A-2	A-3	B-1	B-2	B-3	C-1	C-2	C-3	D-1	D-2	D-3
1 ACU												
2 Bond		X						X				
3 FEDUNI		X										
4 JCU		X										
5 Melb		X			X			X				
6 MONASH												
7 QUT												
8 Syd		X			X							
9 USQ					X							
10 UQ		X										
Total	-	6	-	-	3	-	-	2	-	-	-	-

3.2.1 Three areas of a Learning Management System

We were able to categorise our analysis into three areas that the most universities address their concerns: (a) Definitions of an LMS, (b) Benefits of using an LMS, and (c) Pedagogy for LMS based learning

(a) Definitions of an LMS

The universities define their LMS:

- “Software that allows educational institutions to create and host courses on the Internet.” (ACU)
- “Software for delivering, tracking and managing education and/or training.” (BOND)
- “A web-based Learning Management System that provides student access to important learning and teaching resources including subject information and online learning activities.” (JCU)
- “The University’s online system for delivering subject content to students.” (Melb)
- “The university’s central learning management system. It provides an online space where students access learning materials within unit sites, participate in online activities and communicate with teaching staff and other students.” (QUT)
- “Software systems that systematically provide Unit of Study resources to students electronically.” (Syd)
- “UQ’s eLearning management system which provides an online teaching and learning environment over the internet.” (UQ)

Overall, it is perceived that an LMS is an educational tool, software, and web technology for eLearning and blended learning. The universities use terms, ‘Virtual Learning Environment’, ‘Blended learning’ and ‘eLearning’ that are inclusive of the educational benefits of using an LMS. It can be “combined with face-to-face activities or, for some courses, may constitute the totality of the learning environment” (QUT) and “it involves combining traditional face-to-face methods with online enabled learning in a mutually beneficial fashion” (BOND). The universities also highlight that an LMS “allows customisation of colour schemes and layouts, includes a

number of online educational tools to support learning, communication and collaboration, plus a set of administrative tools to assist the site Instructor to manage and continuously improve the site” (UQ). While the universities seek ways to improve effective learning using technologies, they seem to agree that an LMS is a web-based learning platform where learning resources can be disseminated and communication and collaboration are supported.

(b) Benefits of using an LMS

As a benefit of online learning, the universities address ‘flexibility’ and ‘accessibility’ in which students can access whenever and wherever. For example, it is stated that QUT supports an integration of physical and virtual learning environments to provide flexible learning in time and location of learning activities. It is also believed that such an integration leads to customisation and personalisation of student learning: “flexibility of LMS provides a range of approaches to suit student diversity” and gives learners “more control over how they access and progress through a learning experience” (USQ) and “websites and online tools that have helped students learn at their own pace and collaborate with each other” (Melb). In blended learning or eLearning, it is argued that using an LMS enhances ‘optimal interaction’ and ‘student-paced and –directed learning’ (BOND). Specifically, it is claimed that an LMS can be “used to encourage and stimulate learner participation through interactivity (e.g., in discussion forums and simulations), as well as learner independence through well-scaffolded, online learning modules and assessment tasks etc” (Syd). Overall, the universities highlight that benefits of using an LMS are to improve independent study and enhance students’ participation in communication and collaboration.

(c) Pedagogy for LMS based learning

It appeared that a key function of an LMS is to disseminate information and learning resources relevant to learning/unit/subject/course/assessment. The most universities present this function at the beginning of their policy statements. For example, they indicate that students can access to multiple resources “including links to other websites, sound files, podcasts, image banks and glossaries” (Syd). They also indicate that an LMS offers a technical and pedagogical approach – “Create online formative assessment tasks allowing students to evaluate and receive immediate feedback on their own progress in learning. Help students develop reflective practices using tools such as online journals and ePortfolios” (Syd). Another key function we identified is to communicate and collaboration with staff/lecturers and other classmates – “Facilitate posting and sharing of student-generated content using discussion boards, blogs, wikis, virtual classrooms, web 2.0 social networking technologies, etc” (Syd). None of the policies use the term, pedagogy, but those three approaches, namely, information dissemination, formative assessment with immediate feedback, and cooperative and collaborative learning, can be considered pedagogical strategies for LMS based learning.

Overall, the policies seem to define an LMS as an educational technology tool that provides effective disseminations of information and learning resources to support students’ learning and creates a convenient and efficient learning environment through various communication tools. The policies tend to focus on individuals’ learning (flexibility, self-paced and –directed learning, participatory learning, customisation, personalisation) rather than learning with others (communication, collaboration, community) considering cultural diversity (interculturality). Although their pedagogical strategies for an LMS are not exclusive of interaction and collaboration, their primary focuses are on individual students’ self-engagement and self-assessment and self-motivated learning. This omits the ontological and axiological aspects of communication, collaboration, and community. The details will be explained in the following sections.

3.2.2 Cultural inclusivity in an understanding of a Learning Management System

While none of the policies/guidelines indicate the interculturality dimension, they offer some implications for the other three dimensions, communication, collaboration, and community.

(a) Communication

A (epistemological) communication dimension is represented most commonly in the four dimensions (Table 4.1). For example:

iLearn@Bond assists instructors to engage with students in an interactive environment. Students viewing an iLearning site should be able to communicate with lecturers and other classmates outside of the classroom or consultation hours. (BOND)

Moodle (LMS) can not only provide a convenient place for students to access lecture materials, but has been designed around social constructivist teaching principles that allow staff and students to communicate freely and share understanding through the use of activity plugins. (FEDUNI)

At least one communication tool is provided to students (The LearnJCU Email, Discussion Board and/or Collaboration tools are provided to enable students to communicate with each other and/or teaching staff free of time constraints). (JCU)

The LMS offers a number of features to support communication and collaboration within subjects and community. The various communication tools can help manage the sharing of information and promote interactions between members. (Melb)

The goal/purpose of communication is to share information and to interact with others for effective learning (Individuals' achievement, not for relationships or partnerships) as follows:

"Asynchronous (i.e. time-independent) communications tools can broaden the means of communication for students, providing greater flexibility regarding when and where this occurs. Their use also contributes towards development of the University's stated graduate attributes on Using Tools and Technologies, and, Self-Reliance and Interpersonal Understanding." (JCU)

"(LMS) ... utilises a number of integrated communication tools to promote conversation between you, your lecturers and the rest of your class. Discussion boards and the Notifications page are the most widely used." (Syd)

This perspective (focusing on individuals' development of knowledge and skills) on communication leads not to offer various forms of communication, but to sustain one-to-many communication. For example, students are expected to:

- post to a blog, journal or a discussion board
- participate in group discussions on a particular topic
- communicate with other members of a tutorial or team via a private group, and
- introduce yourself to the rest of the class. (Syd)

In these activities, individual students are supposed to undertake 'posting', 'participating', 'communicating', and 'introducing.' Collaboration and community are indistinctive and non-dominant in an LMS. Hence cultural diversity could be merely considered and not promoted in LMS design.

(b) Collaboration

Collaboration is often used with communication. In the analysis, we presume that communication means 'sharing ideas/information with others' and collaboration means 'solving a problem(s) or constructing new knowledge through teamwork.' Some universities have a separate 'Communication and Collaboration' section, but enumerate communicative and collaborative tools available in their LMS including Announcements, Email, Blogs, Discussions, Journals, Wikis, Groups, and Portfolios and their communication functions (Melb & Syd). 'Communication' and 'collaboration' appear in the following forms only: "communicate with other students or staff ..." and "collaborate with each other." In this sense, collaboration is meant to refer to 'developing individuals' knowledge and facilitating

individuals' achievement.' In other words, 'collaboration' is not contextually addressed, but described that an LMS can be used for student collaboration that enables them to achieve explicit learning outcomes. This means that 'collaboration' in LMS policies and guidelines practically refers to a 'cooperative problem-solving skill' because there is no relationship building articulated.

(c) Community

It appeared that the most universities do not include 'community' in their LMS policies except BOND and Melb:

The iLearn system is maintained primarily for educational use (i.e. to support subjects offered by Bond University). However, a Community Site may be requested for research or other academic purposes and will be evaluated on a case-by-case basis.

A Community Site is a site established and used to connect students, staff and groups with a common interest. The Site can be linked to a subject, be focused on staff and/or student matters or created to unite persons or groups with a common goal at Bond University. Community Site structure is the same as Subject Site structure. (BOND, Community Site Lifecycle Management)

"A Community Site" focuses on connecting persons or groups with a common goal, but a subject site is exception because a subject site and a community site are fundamentally different as it states, "a Community Site may be requested for research or other academic purposes." Like BOND, Melb also distinguishes between a subject/unit site and a community site. In a section of 'Communication and Collaboration' described by Melb, 'community' constantly appears in the list of communicative and collaborative tools. For example, "The LMS has two synchronous (real time) [Chat and Virtual Classroom] tools for online communication within a subject or community" (Melb). This means a 'community' site refers to another form of LMS, and does not necessarily mean that an LMS subject site can be a (learning) community.

Overall, the policies on LMS tend to focus on individuals' epistemic aspects of communication and collaboration. In the policies, communication, collaboration and community are indistinctive, and collaboration and community are vaguely (or too broadly) recognised, and cultural diversity and identities do not appear. This means that an LMS is considered a technological tool for flexible delivery learning. Unfortunately, we could not find any other statements indicating understanding or facilitating various communication channels, possible collaborative process models, and feasible community models. Also we failed to identify any ontological and axiological aspects of communication, collaboration, community, and interculturality. Significantly, we could not find any principles and strategies of an LMS for Indigenous students and those students who have diverse cultural and linguistic backgrounds.

Chapter 4 Culturally inclusive learning in Blackboard units

Based on the dimensions of culturally inclusive learning for an LMS and the hypothetical questions (Table 2.1 and 2.2), QUT Blackboard sites across all faculties were randomly selected and evaluated. In this chapter, we present the evaluation results and its analysis against the four dimensions of culturally inclusive learning in an LMS.

4.1 Evaluation outcomes of Blackboard units

50 Blackboard sites across disciplines and faculties were randomly selected for our initial access. Specifically, eight units were chosen from each faculty and one business school, and two community sites from Faculty of Education (Table 4.1).

Table 4.1 Selected QUT Blackboard sites

Faculty/School	Education	Creative Industries	Health	Law	Science & Engineering	Business School	Total
Number of Units/Communities	8 (Units) 2 (Communities)	8 (Units)	8 (Units)	8 (Units)	8 (Units)	8 (Units)	50

In evaluating the selected sites, we reviewed the content, structure and interaction of each site with the four components of an LMS that Park (2011) proposes. He categorises Blackboard functions and features for his study on students' interactive learning experiences. His framework was helpful to evaluate the sites in a systematic manner. His four components are Unit Information (UI), Learning Contents (LC), Interactive Communication (IC) and Supplementary Functions (SF), and each component is:

Unit Information (UI): The UI outlines unit objectives and structure. It is vital that the element should be presented with a form of unambiguous and detailed timeline from the learners' study schedule and patterns. A flexible and comprehensive learning schedule may need to consider accommodating diverse student needs at different learning circumstances such as different age-levels and workload.

Learning Contents (LC): The LC provides interactive learning modules reshaping learning materials and resources in terms of interactive learning experience and proposed learning schedule in UI. It has to be developed by considering various media such as audio, video and print, and its delivery form in terms of usability and accessibility that may affect learning activities in either positive or negative ways.

Interactive Communication (IC): The IC is the area where communication and interaction takes place between students and students, and between students and teacher through various communication tools, asynchronous and synchronous. The asynchronous discussion board is the main communication channel where most learning interactions take place, so it requires the development of its own framework.

Supplementary Functions (SF): The SF such as assessment, survey, statistics and additional resources play an important role in making a unit site more functional and effective. In particular, the learning evaluation has to be deliberately set up to ensure the learners participate in it as a part of their learning. Therefore, the learning evaluation also requires its own structure. (Park, 2011, pp. 27-28)

As shown in the table 4.2 below, QUT Blackboard is formatted with eight sections that are easily aligned to Park’s four components of an LMS. The available contents in each section of the 50 units/communities primarily focus on information dissemination and delivery and have limited use of communication and collaboration tools (Further details are available in Table 4.3 and 4.4)

Table 4.2 QUT Blackboard structure

LMS Components	QUT Blackboard sections	Contents
Unit Information (UI)	Announcement	Unit introduction, assessment, lecture/tutorial, schedule
	Unit Details	Unit outline, rationale, aim, learning outcomes, content, approaches to teaching and learning, assessment
Learning Contents (LC)	Learning Resources	Lecture/tutorial materials such as articles, PowerPoint slides, website links, video clips, lecture recordings, weekly activities
	Assessment	Assessment details, late assessment, assessment minder, cite/write
Interactive Communication (IC)	Tools	Questions and answers about assessment/unit, Sharing ideas and opinion, Lecture recordings, My Grade, Wikis, Blogs, Blackboard Collaborate
Supplementary Functions (SF)	Contact Us	Contact number/email address/location/office hours/personal websites/portrait photos
	Feedback	No content
	ePortfolio	No content

As shown in table 4.3 below, the four sections including Announcements, Unit Details, Learning Resources, and Assessment were mostly used in the majority of the units. The sections were used to provide students with information and learning resources relevant to the units, and the underlying communication type was one-to-many (a teacher to many students) communication. Contact Us, Feedback, and ePortfolio were rarely used or not used at all. Contact Us contained the contact information of unit coordinator and/or tutors including their location, email address, office phone number, etc. 25 units (50%) provided ‘phone number’ and ‘email address’ only. It was very rare that either portrait photos or office hours presented. Feedback and ePortfolio were not used at all and there was no relevant item/content. Thus, we were not able to find any culturally inclusive dimensions in these two sections.

Table 4.3 Evaluations of 50 QUT Blackboard sites

Units/ Communities	QUT Blackboard sites							
	UI		LC		IC	SF		
	Announcement	Unit Details	Learning Resources	Assessment	Tools	Contact Us	Feedback	ePortfolio
1 CRB xxx	X	X	X	X	-	X		
2 EDB xxx	X	X	X	X	X	X		
3 EDN xxx	X	X	X	X	X	X		
4 EAB xxx	X	X	X	X	X	X		
5 CRN xxx	X	X	X	X	X	X		
6 CLB xxx	X	X	X	X	-	-		
7 CRB xxx	X	X	X	X	X	X		
8 CRP xxx	X	X	X	X	X	-		

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9	BEB xxx	X	X	X	X	-	-		
10	DAB xxx	X	X	X	X	X	X		
11	KKZ xxx	X	X	X	X	-	X		
12	KJB xxx	X	X	X	X	-	-		
13	KCB xxx	X	X	X	X	X	X		
14	DAB xxx	X	X	X	X	X	-		
15	DAN xxx	X	X	X	X	X	-		
16	KJB xxx	X	X	X	X	X	X		
17	CSB xxx	X	X	X	X	X	-		
18	CLB xxx	X	X	X	X	-	X		
19	HLN xxx	X	X	X	-	-	-		
20	CSB xxx	-	-	-	-	-	-		
21	CSB xxx	-	-	-	-	-	-		
22	CSB xxx	X	X	X	X	X	-		
23	CSB xxx	X	X	X	X	X	-		
24	LQB xxx	X	X	X	X	X	-		
25	JSB xxx	X	X	X	X	X	X		
26	LWB xxx	X	X	X	X	X	X		
27	JSB xxx	X	X	X	X	X	-		
28	JSB xxx	X	X	X	X	-	X		
29	LWN xxx	X	X	X	X	X	X		
30	LWS xxx	X	X	X	X	-	X		
31	LWN xxx	X	X	X	X	X	-		
32	LWN xxx	X	X	X	X	-	-		
33	BEN xxx	X	X	X	X	X	X		
34	CAB xxx	X	X	X	X	X	X		
35	ENB xxx	X	X	X	X	-	-		
36	ENB xxx	X	X	X	X	X	X		
37	ENN xxx	X	X	X	X	X	-		
38	BEB xxx	X	X	X	X	X	-		
39	INB xxx	X	X	X	X	X	-		
40	IAB xxx	X	X	X	X	X	X		
41	AMB xxx	X	X	X	X	X	-		
42	BSB xxx	X	X	X	X	X	X		
43	AMN xxx	X	X	X	X	X	-		
44	AMB xxx	X	X	X	X	X	X		
45	EFB xxx	X	X	X	X	X	-		
46	EFN xxx	X	X	X	X	X	X		
47	EFB xxx	X	X	X	X	-	-		
48	AMN xxx	-	X	X	X	X	X		
49	ED xxx	X	X	X	X	-	-		
50	OER xxx	X	X	X	X	-	X		
Total		47	48	48	47	34	25	0	0

Sixty-eight per cent (34/50) of units used the tools section and only particular tools such as Lecture Recordings, Discussion Board and Blackboard Collaborates were utilised (Table 4.4). It seemed that the tools are used as a supplementary to lecture/tutorial in a form of Q & A and only a few units used interactive communication tools such as Discussion Boards, Wikis, and Blogs. We also observed that not many students participate in those communication tools and those numbers radically decrease over time. In the tools section of QUT Blackboard, there are 15 tools: Discussion Board (DB), Groups, Wikis, Blogs, Journals, Lecture Recordings (LR), Blackboard Collaborates (BC), My Grades (MG), Achievement (A), Calendar (C), Study Smart (SS), Tasks, GoSoap Box (GSB), Announcements, Course Materials (other available tools such as Announcement, Contacts, Course Materials, Glossary, Send Email, and My Grades were excluded in this count because these are just hyperlinks and used separately in other sections). The most used tools were Lecture Recordings (32/50). Eight units utilised Discussion Board (8/50) and Blackboard Collaborate (8/50). Other interactive communication tools such as Groups, Wikis, Journals, and Blogs were rarely used or not used across the units.

Table 4.4 Evaluation of the Tools in 50 QUT Blackboard sites

Units/ Communities	Tools													
	DB	Groups	Wikis	Blogs	Journals	LR	BC	MG	A	C	SS	Tasks	GSB	
1	CRB xxx													
2	EDB xxx	X					X							
3	EDN xxx	X		X		X								
4	EAB xxx			X		X								
5	CRN xxx	X					X							
6	CLB xxx													
7	CRB xxx					X								
8	CRP xxx					X	X							
9	BEB xxx													
10	DAB xxx					X								
11	KKZ xxx													
12	KJB xxx													
13	KCB xxx					X	X							
14	DAB xxx					X	X							
15	DAN xxx					X								
16	KJB xxx					X								
17	CSB xxx					X	X							
18	CLB xxx													
19	HLN xxx													
20	CSB xxx													
21	CSB xxx													
22	CSB xxx					X								
23	CSB xxx	X				X								X
24	LQB xxx					X								
25	JSB xxx					X	X							
26	LWB xxx	X				X								
27	JSB xxx					X								
28	JSB xxx													

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Faculty of Health	11	KKZ xxx		
	12	KJB xxx		
	13	KCB xxx	X	A-2
	14	DAB xxx		
	15	DAN xxx		
	16	KJB xxx		
	17	CSB xxx	X	A-2
	18	CLB xxx	X	D-2
	19	HLN xxx		
	20	CSB xxx		
Faculty of Law	21	CSB xxx		
	22	CSB xxx		
	23	CSB xxx		
	24	LQB xxx		
	25	JSB xxx	X	C-2
	26	LWB xxx	X	A-2, B-2
	27	JSB xxx	X	C-2
	28	JSB xxx		
	29	LWN xxx	X	A-2
	30	LWS xxx		
Science and Engineering Faculty	31	LWN xxx		
	32	LWN xxx		
	33	BEN xxx		
	34	CAB xxx		
	35	ENB xxx		
	36	ENB xxx		
	37	ENN xxx		
	38	BEB xxx		
	39	INB xxx		
	40	IAB xxx		
QUT Business School	41	AMB xxx		
	42	BSB xxx	X	A-2
	43	AMN xxx		
	44	AMB xxx		
	45	EFB xxx		
	46	EFN xxx		
	47	EFB xxx		
	48	AMN xxx	X	A-2
Communities	49	ED xxx		
	50	OER xxx		
Total		15	A-2 (10), B-2 (3), C-2 (3), D-2 (2)	

Even though the 15 units contained some dimensions in their Blackboard sites, they did not fully reflect all the hypotheses, and seemed to focus more on the second hypothesis of each dimension (i.e., individual students' knowledge acquisition). The details of each dimension are available in the following subsections.

4.2.1 Communication for culturally inclusive learning

In the communication dimension, the majority of the units appeared to use one-to-many communication (sometimes self-reflection). Even though the four components (UI, LC, IC, and SF) have different items/contents/structures, the dominant communication type was a one-way directional way (a unit coordinator to many students, and not in reverse). This communication type not only rejects learning with others, but also enhances the current students' perception of an LMS that is a place where resources and materials are downloadable. In other words, both teachers' and students' expectations of Blackboard are very low. The table 4.6 below shows the evaluation results of the communication dimension.

Table 4.6 The evaluation results of QUT Blackboard sections with the communication dimension

LMS Components	QUT Blackboard	Contents
Unit Information (UI)	Announcements	The section is used to present notices/information about a unit such as unit introduction and assessment (the most), and lectures and tutorials schedule and updates (rare). Such information is presented in a text form only and there is no content with visual materials and encouraging statements that ask students to participate in their learning or express their concerns.
	Unit Details	The section focuses on providing students with information and encouraging them to use Blackboard for their learning (mostly self-study). Only few units provide the unit details using a learning map (or other visual forms) that could help students engage in the learning journey.
Learning Contents (LC)	Learning Resources	The section presents too many resources without providing a description or guide, which could lead to students' confusion. It seems that none of the units use a particular filing strategy or apply a systematic approach (e.g., multi-level directory hierarchies, a theme or module based folder system). The arrangement of file functions are not used in which newly added items appear at the bottom of the page.
	Assessment	The units use this section to present the assessment details and to attach marking criteria sheets. Some units provide FAQ and/or referred to a discussion board for inquiries.
Interactive Communication (IC)	Tools	Lecture Recordings, Blackboard Collaborates and Discussion Board were used more than the other tools. Especially, Lecture Recordings are mostly used. Even though the three tools (Lecture Recordings, Blackboard Collaborates and Discussion Board) have different functions, they were primarily used to present/deliver learning resources and to give answers. In Discussion Boards, students ask questions and the coordinator answer (one to one communication), however, this rarely happens cross the units. Its common form of communication is that a

Supplementary Functions (SF)		teacher asks a question to all students and individual students answer (not in reverse). Some units use Discussion Boards for students' own self-introductions or idea sharing. All the tools are used for one-to-many or self-reflection.
	Contact Us	Staff photos and office hours are very rarely provided No link to staff profile pages is provided.
	Feedback	None of the units uses this section.
	ePortfolio	None of the units uses this section.

In Announcement and Unit Details of UI, the primary communication was a one-way form and there was a lack of evidence that the communication is aimed at encouraging students to participate in learning and considering benefits of human-to-human interaction. LC was primarily used to deliver various forms of resources and materials. There was no clear system or guide applied to arrange multiple resources, which causes difficulty navigating and searching. In IC, we failed to find a single unit that utilises any tools for collaboration and community. A typical way of using a tool is for general queries and completing an assigned task by individual students. In addition, only 50% of the units used Contact Us to present information such as a name of teaching team, an email address, and a contact number. None of the units provided staff's room location on campus and/or available timeslots for consultation.

Some units were inclusive of some communication tools, but there was a lack of evidence that they are used to facilitate any human relationships other than a Q & A form of communication. In this context, students, especially Indigenous students, might neither feel nor experience a sense of belonging to a group. In the Blackboard sites, 'communication' is understood to mean 'posting information,' which does not offer any opportunity to build relationships between teachers and students and/or between students and students. There was no evidence that the teachers attempt to encourage students to engage into human-to-human interaction.

4.2.2 Collaboration for culturally inclusive learning

There were some units that facilitate group work and emphasise the importance of group work (not collaboration). The group work was used to ask students to complete given tasks/assessments and develop individuals' skills rather than taking advantages of collaborative learning. In addition, there were neither given detailed grouping processes nor principles of group communication and collaboration. This means that the group work focuses on finding answers in a group rather than practising cultural values and building relationships with others. The following table shows how the four components were used for collaboration.

Table 4.7 The evaluation results of QUT Blackboard sections with the collaboration dimension

LMS Components	QUT Blackboard	Contents
Unit Information (UI)	Announcements	There are a few encouragements for students to work together. The coordinators advise students to form a group as parts of the assignment. There is no information given about how students can make a group in an efficient way and why they should work together.
	Unit Details	In relation to learning outcomes, some units seem to highlight the impotence of participating in group work and students' position as a member of group. The ultimate goal is on knowledge and skills that individual students should achieve by completion of a given task in a group.

Learning Contents (LC)	Learning Resources	Its primary use is to present various forms of learning resources for on-campus weekly lectures and tutorials/workshops and no additional resources are available for collaborative learning processes.
	Assessment	Its primary use is to present the details of assessment. In a case that a unit offers a group task, there is no information about students' engagement in the group work and collaboration
Interactive Communication (IC)	Tools	Communication (mostly discussion boards and some wikis) is rarely interactive and unidirectional between a teacher and a student (not many). Neither mutual interpersonal discussion nor collaborative knowledge construction are observed.
Supplementary Functions (SF)	Contact Us	No images or statements indicating that staff are part of QUT community
	Feedback	None of the units uses this section.
	ePortfolio	None of the units uses this section.

The evaluation of UI for the collaboration dimension showed that the announcements section is used to inform of new resources added in the resources page rather than for encouragement of participation in learning. Although some units used the term, collaboration, in the unit details section, the focus was on individuals' knowledge and skills in a group activity rather than their engagement in a collaborative process. We identified the following example that is a typical one in a way to encourage students to undertake a group work: *"Please note that a) you cannot complete this unit on your own and b) if you don't have a group on Blackboard you will get zero for the group components."* This statement would make students feel worried about forming a group and they cannot concentrate on collaborative learning because it does not offer any opportunities for them to understand challenges of interpersonal communication and collaboration. In addition, we observed that the majority of the units emphasise that learning happens through on-campus lectures and tutorials only and encourage students to visit the Blackboard sites on a regular basis to download/read provided resources and materials and to check coordinator's messages.

The evaluation of LC for the collaboration indicated that the learning resources and assessment sections focus on individual students' access to provided information. The importance of self-study for development of individuals' knowledge and skills in assessment completion were frequently emphasised. Some of the units contained a group activity as parts of the assessment, but the primary focus was on individual rather than collective and relational. The tools of IC were used as a supplement to LC in which individual students are encouraged to focus on given tasks. A few units offered a group activity for collaboration using Wikis and Discussion Boards, but the student engagement was not participatory, but just 'posting ideas.' Finally, there was no evidence that the units attempt to facilitate group discussion and collaborative knowledge construction. In addition, no evidence was found in SF that encourages students to make contact with teaching staff or to propose a group meeting.

4.2.3 Community for culturally inclusive learning

It appeared that the most units focus on individual students' assessment completion. This would be evidence that there is no consideration for cultural diversity and community. This means that students are not given an opportunity to think of a sense of community or to participate in building the unit as a learning community. Further details are available in the following table.

Table 4.8 The evaluation results of QUT Blackboard sections with the community dimension

LMS Components	QUT Blackboard	Contents
Unit Information (UI)	Announcements	Few units use words relevant to a sense of community. Most units tend to focus on 'you' rather than 'us'. Exiting relationships and learning community are not considered.
	Unit Details	There is no evidence to promote any collective values or individuals' responsibility for the learning community
Learning Contents (LC)	Learning Resources	Multiple resources are presented for self-study only. There is no evidence that the added resources offer group reading and/or watching.
	Assessment	Fully focus on individual students' completion of given assignments, even in a case of a collaborative group activity.
Interactive Communication (IC)	Tools	There is evidence that some teachers encourage students to participate in the tools, but the tools are mostly used for individual students' choice to either post their ideas or not.
Supplementary Functions (SF)	Contact Us	No contact details of the course/program coordinators and school appear.
	Feedback	None of the units uses this section.
	ePortfolio	None of the units uses this section.

The analysis results of UI indicated that students are considered independent individuals who are responsible for their own learning. Even though one unit presents "we are family," it remains an empty slogan in which it does seem to be neither related to any collective value reflecting the pre-existing relationship. Some of the units informed students of guest lecturers, field experience, local events, but these were one-off events. As anticipated, the unit details section had no evidence to promote any collective values or individuals' responsibility for the learning community. In LC, there was no content and function added to encourage students to read in a collective manner or share their feedback with other students via an interactive communication tool. The assessment section fully focused on individual students' completion of given assignments. Although some of the units offered group activities, the focus remained individual students' task completion. There was no indication of how students become full members of this learning community through those group activities. As shown, some units used interactive communication tools such as Discussion Boards, Blackboard Collaborates, and Wikis, but the teachers' encouragement for students to participate in the tools remains 'posting your ideas.'

4.2.4 Interculturality for culturally inclusive learning

There was no evidence that the selected QUT Blackboard sites are responsive to cultural diversity and intercultural competence. There were few units that encourage students to undertake their task with cultural perspectives. The unit content was about 'cultural studies' in their disciplines that students' understandings of cultural diversity and inclusivity are part of the study. Interestingly, all the units did not use any interactive communication tools for human-to-human interaction. As the evaluation results of 'communication,' 'collaboration,' and 'community' have already indicated, interculturality cannot emerge without using or with limited use of the tools. As a result, no detailed evaluation of the sites for the interculturality dimension was possible.

In summary, the primary communication type and method used across the sites were one-to-many form of communication and a top-down approach. The intrinsic features were a managerial hierarchy and a methodical transfer of information from one teacher to many students. Collaboration and community rarely appeared and an underlying assumption of learning was individual students' self-study that individual students must take responsibility for their own 'independent' learning. Thus, students' engagement in the sites was mostly task-oriented. Significant things observed in this evaluation were: 1) only a small number of students participate in the interactive communication tools and 2) the participating number significantly decreases over the semester. Overall, the current ways of using Blackboard are characterised as: 1) students are positioned as individual consumers of given information; 2) teachers are knowledge transferors and intelligent updaters; and 3) the sites are digital repositories where individual students' access is allowed.

Chapter 5 Stakeholders' perceptions and experiences of Blackboard

In this data collection stage, 100 Indigenous students participated in an online questionnaire and 11 academic staff, nine Indigenous students, and eight professional staff (five administrative staff and three learning designers) completed a semi-structured interview.

5.1 Indigenous students' perceptions and experiences

An online questionnaire involved completing 21 items anonymous questions with a 5-point scale (Excellent – Poor) and written responses. It has the four sections: Section A. Personal demographics, Section B. General experiences of QUT Blackboard, Section C. Preferences in QUT Blackboard, and Section D. Open-ended questions. In particular, the section C questions were designed with cultural scales from holistic to collectivistic to individualistic cultural values in line with the four dimensions of culturally inclusive learning in an LMS. The scales were described between community-driven and information-focused, between communication for community building/maintenance and communication for information dissemination, between community-oriented and task-oriented, between collaboration and relationship focused and individuals' task focused, and between collectivistic sharing and individualistic self-study. The participants were asked to choose a best description of their learning preferences in QUT Blackboard. The participation was entirely voluntary and the survey was closed when the number of respondents reached 100.

5.1.1 Section A. Personal demographics

As shown in the table 5.1 below, the participated students were from across study areas. The highest number was marked by students in Bachelor of Health and Community courses including Nursing, Nutrition, Public Health, Podiatry and Biomedical Science, followed by Bachelor of Business, Law and Justice, and Education.

Table 5.1 Study areas

Study areas	Numbers
B. Applied Science	2
B. Health & Community	33
B. Business	20
B. Creative Industries (Design, Art, Dance, Professional writing, etc.)	7
B. Education	10
B. Engineering	7
B. Law and Justice	13
Postgraduate	6
PhD	2
Total	100

Overall, at the time of the survey, the participants have studied for 2.2 years fulltime in average in QUT. The table 5.2 below indicates that the lowest year of study is a semester length and the highest is five years. In this report, we did not analyse the responses in comparison with study years, but focus on their overall perceptions, experiences, and preferences over Blackboard.

Table 5.2 Study years

Years	Numbers
0.5	8
1	19
1.5	6
2	25
2.5	6
3	21
3.5	5
4	7
5	3
Total	220.5
Average	2.205 years

Half of the respondents preferred to have blended learning, whereas 41/100 students chose ‘on-campus’ as their preferred study mode (Table 5.3). We anticipated that the majority students would choose ‘blended.’ Questions arise, why do a significant number of students prefer ‘face-to-face’ over blended and are there any cultural reasons? This statistics may imply that Blackboard has been used as a supplementary and students have perceived it as a good-for-nothing tool and thus they prefer to have face-to-face learning (further discussion will be available in the analysis of interview data).

Table 5.3 Preferred study modes

Study modes	Preferences
On campus	41
Off campus (Blackboard only)	9
Blended (on campus + Blackboard)	50
Total	100

5.1.2 Section B. General experiences of QUT Blackboard

The students were asked to rate their overall experience in QUT Blackboard in terms of its support and facilitation of their learning. The majority of the respondents (77.9%) responded that the Blackboard has been well used to support and facilitate their learning (Table 5.4).

Table 5.4 Overall experiences of QUT Blackboard

Answer Options	Response Rate	Response Count
Excellent	20.0%	19
Very good	57.9%	55
Average	16.8%	16
Fair	3.2%	3
Poor	0.0%	0
Not applicable	2.1%	2
Other (please specify)		0
Answered question		95
Skipped question		5

Specifically, the students were asked to rate their experiences of Unit Information (UI) component in Blackboard sites and nearly 70% of them chose either *Excellent* or *Very good* (Table 5.5). The components of UI were included in the question such as Announcements and Unit Details. The majority of them indicated that UI pages are used for effective distribution of information. Two student left comments. One student pointed out “overall there are inconsistencies, some units never use Announcements” and the other wrote, “Contact page does not always include tutors.” These comments are very significant in which a specific way of using the UI components is unknown particularly for culturally inclusive learning.

Table 5.5 Experiences of Unit Information component

Answer Options	Response Rate	Response Count
Excellent	16.8%	16
Very good	52.6%	50
Average	20.0%	19
Fair	5.3%	5
Poor	2.1%	2
Not applicable	3.2%	3
Other (please specify)		2
Answered question		95
Skipped question		5

For the experience of Learning Resources (LR) component, the majority of the students (> 75%) responded that it has been well used to support and facilitate their learning (Table 5.6). LR component contains various learning resources and materials, which is the primary function for information dissemination. Interestingly, three students' comments on this question indicated, “some

are more user friendlier than others” in which some units offer learning resources in a visually and systematically organised way. Like UI, there is no consistent way to deliver resources in an efficient way. Furthermore there is no specific direction for managing multimedia resources.

Table 5.6 Experiences of Learning Resources component

Answer Options	Response Rate	Response Count
Excellent	36.8%	35
Very good	38.9%	37
Average	13.7%	13
Fair	4.2%	4
Poor	2.1%	2
Not applicable (Digital learning materials have rarely been disseminated via QUT Blackboard in my units/courses)	4.2%	4
Other (please specify)		3
Answered question		95
Skipped question		5

The table 5.7 shows that the students’ rating on their experiences of Interactive Communication (IC) tools available in QUT Blackboard. The tools include Discussion boards, Blogs, and Blackboard Collaborate. While the student satisfaction with UI and LR components were very high, only 26.4% responded either *Excellent* or *Very good* to this question. Significantly, 26.3% indicated that IC tools have been rarely used in their units. The four comments indicated that the tools “have played a very minor role” in their units.

Table 5.7 Experiences of Interactive Communication component

Answer Options	Response Rate	Response Count
Excellent	5.3%	5
Very good	21.1%	20
Average	18.9%	18
Fair	13.7%	13
Poor	14.7%	14
Not applicable (Those communication tools have been rarely used in my units/courses)	26.3%	25
Other (please specify)		4
Answered question		95
Skipped question		5

The table 5.8 shows that the identical response rate to *Not applicable* of the previous question appeared in this question about their experiences of Collaboration and Community (CC) tools. The tools include Groups, Wikis, Discussion boards, and Collaborate (real-time communication/lecturing). Two students left comments that point out interesting facts: “For group work, Facebook seems to be the norm” and “Collaborate has been used for real-time communication and it seemed more like a fun tool to get people involved.” The latter implies that real-time

communication tools are effective for social interaction and the former means that students' group work could happen in their own (external) social media tools.

Table 5.8 Experiences of Collaboration and Community component

Answer Options	Response Rate	Response Count
Excellent	4.2%	4
Very good	20.0%	19
Average	25.3%	24
Fair	15.8%	15
Poor	8.4%	8
Not applicable (Opportunities for collaborative learning and community building in QUT Blackboard have rarely been provided and facilitated in my units/courses)	26.3%	25
Other (please specify)		2
Answered question		95
Skipped question		5

The table 5.9 shows that half of the participants were satisfied with the lecture-recording tool. The comments left by ten students indicated that there are technical problems and human faults and both seem to be interrelated: No audio, mismatched video and audio, and low quality audio and/or video, and “lecturers often forget the slides”, “It would help to have it communicated to us when the lectures will not be recorded when some are and others are not”, and “lecturers often give more information in the lecture than they do on the recording.” These comments explain why the satisfaction of the lecture-recording was relatively lower than that of UI and LR.

Table 5.9 Experience of Lecture Recording Service

Answer Options	Response Rate	Response Count
Excellent	17.9%	17
Very good	34.7%	33
Average	28.4%	27
Fair	3.2%	3
Poor	8.4%	8
Not applicable (My units/courses have never/rarely provided the recorded lecture services)	7.4%	7
Other (please specify)		10
Answered question		95
Skipped question		5

5.1.3 Section C. Preferences in QUT Blackboard

There were almost equal preferences over management and facilitation of QUT Blackboard sites. 57.1% of the respondents (the first three) preferred to have more community driven experiences (holistic and collectivistic), whereas 42.8% (the bottom two) chose more individual and information

driven experiences (individualistic) (Table 5.10). Interestingly, one of the comments indicated that Blackboard must be used to offer “clear communications that are able to help me understand the content of the lectures / tutorials and the task given.” This means that Blackboard even as an information dissemination and delivery platform still remains ineffective. In other words, it needs to be used in a more efficient way to support the completion of students’ given tasks and to disseminate resources and information, and at the same time, it is also required to accommodate a need for community and relationship driven experience. The former reflects the current use of Blackboard and the latter implies its future use, which is consistent with the results of Section B. General experiences of QUT Blackboard.

Table 5.10 Preferences over management and facilitation

Answer Options	Response Rate	Response Count
I prefer that QUT Blackboard based units/courses facilitate ‘our’ engagement of what ‘we’ are supposed to do to build or maintain a learning community.	33.3%	28
I prefer that QUT Blackboard based units/courses encourage ‘us’ what ‘we’ are supposed to do as a member of the learning community.	11.9%	10
I prefer that QUT Blackboard based units/courses reassure ‘us’ what ‘we’ are supposed to do for given tasks.	11.9%	10
I prefer that QUT Blackboard based units/courses provide ‘me’ with a clear indication about given tasks that ‘I’ need to undertake.	22.6%	19
I prefer that QUT Blackboard based units/courses provide ‘me’ with relevant ‘information’ that helps me understand given tasks.	20.2%	17
Other (please specify)		6
	Answered question	84
	Skipped question	16

As shown in the table 5.11 below, the results of students’ preferences over visual communication in Blackboard sites showed an even distribution across the five items, yet there was a higher preference to collectivistic and holistic (64.2%) ways. The statistics implies that providing multimedia and extra resources may be less important for facilitating community building as well as encouraging task completing unless those are used to support human-to-human interaction.

Table 5.11 Preferences over visual communication

Answer Options	Response Rate	Response Count
I prefer that QUT Blackboard based units/courses show images/videos/animations that encourage ‘us’ think of ‘our’ learning community.	19.0%	16
I prefer that QUT Blackboard based units/courses show images/videos/animations that represent cultural diversity in this learning community.	23.8%	20
I prefer that QUT Blackboard based units/courses reassure ‘us’ how ‘we’ can engage in given tasks with additional resources.	21.4%	18

I prefer that QUT Blackboard based units/courses provide 'me' with additional resources that support 'my' learning.	19.0%	16
I prefer that QUT Blackboard based units/courses provide 'me' with related resources that assist me to understand given tasks.	16.7%	14
Other (please specify)		3
Answered question		84
Skipped question		16

As shown in the table 5.12 below, the students' preferences over a sense of community with using various communication tools in Blackboard indicated that the majority of the respondents (77.4%) expect to have more person-to-person interaction and communication that leads them to experience a sense of community.

Table 5.12 Preferences over multiple communication channels

Answer Options	Response Rate	Response Count
I prefer that QUT Blackboard based units/courses utilise multiple communication channels that encourage 'us' to create and/or maintain 'our' learning community.	32.1%	27
I prefer that QUT Blackboard based units/courses utilise multiple communication channels that encourage 'us' to build collegial relationships among peers.	15.5%	13
I prefer that QUT Blackboard based units/courses utilise multiple communication channels that encourage 'us' to interact and communicate among peers.	29.8%	25
I prefer that QUT Blackboard based units/courses utilise multiple communication channels that encourage 'me' to interact and communicate with peer students in my group.	4.8%	4
I prefer that QUT Blackboard based units/courses NOT offer multiple communication channels unless those are directly related to complete given tasks.	17.9%	15
Other (please specify)		3
Answered question		84
Skipped question		16

Like the results of the previous question, the students' preferences over group learning resulted in that they expect to have more collaborative than cooperative learning (65.5%). It should be noted that the conditions of both approaches are an 'organised' person-to-person interaction and communication as well as a designed problem-solving process. Also those approaches require the teacher's active participation and thorough moderation.

Table 5.13 Preferences over group learning

Answer Options	Response Rate	Response Count
I prefer that QUT Blackboard based units/courses offer collaborative experiences that support and encourage each other to realise and enhance the connectedness.	25.0%	21
I prefer that QUT Blackboard based units/courses offer collaborative experiences that highlight the importance of harmonious and efficient teamwork.	16.7%	14
I prefer that QUT Blackboard based units/courses offer collaborative experiences that facilitate effective teamwork	23.8%	20
I prefer that QUT Blackboard based units/courses indicate clear rules of cooperation that results in fairness in my group.	11.9%	10
I prefer that QUT Blackboard based units/courses offer cooperative skills that ensure that given tasks are completed in a fair and efficient way.	22.6%	19
Other (please specify)		1
	Answered question	84
	Skipped question	16

As show in Table 5.14 below, less than 30% of the respondents preferred that the learning resources presented in Blackboard sites need to be used to encourage a sense of community and group. The majority of them focused on 'given tasks' via either group-study or self-study.

Table 5.14 Preferences over learning resources

Answer Options	Response Rate	Response Count
I prefer that QUT Blackboard based units/courses offer learning resources in a way to encourage 'us' to share 'our' own learning experiences.	21.4%	18
I prefer that QUT Blackboard based units/courses offer learning resources in a way to encourage 'us' to exchange information and undertake group work.	8.3%	7
I prefer that QUT Blackboard based units/courses offer learning resources in a way to facilitate group-study and self-study for given tasks.	22.6%	19
I prefer that QUT Blackboard based units/courses offer learning resources in a way to facilitate 'my' self-study and are related to given tasks.	29.8%	25
I prefer that QUT Blackboard based units/courses offer learning resources that are directly related to given tasks.	17.9%	15
Other (please specify)		3
	Answered question	84
	Skipped question	16

The students' preferences over the recorded lecture services indicated that their use of lecture recording is mostly in need like 'further self-study' and 'when missed a class.' The lowest rate in this question is 2.4% to the third item, teachers' encouragement or advice on students to use the recorded lectures, implies that the most students and teaching staff are unaware that lecture recordings may be an effective tool to promote community based learning.

Table 5.15 Preferences over lecture recording

Answer Options	Response Rate	Response Count
I always listen/watch recorded lectures for further self-study.	34.5%	29
I only listen/watch the recorded lectures when I have missed the lectures.	42.9%	36
I only listen/watch the recorded lectures when my tutor asks me to do or advises me that there is important information in the video.	2.4%	2
I prefer to listen/watch selected parts of the recorded lectures that I don't understand.	11.9%	10
I tend not to listen/watch the recorded lectures for some reasons.	8.3%	7
Other (please specify)		8
	Answered question	84
	Skipped question	16

5.1.4 Section D. Open-ended questions

The first question was about the students' thoughts of culturally inclusive learning in Blackboard and 70 students responded. 49 of them responded they have neither thought of it nor unsure what it is. A typical response is, "I've never really thought about that. I always saw Blackboard as just a 'resource' page because that's what I mainly use it for, to get information." On the other hand, 21 respondents expressed their thoughts. The followings are the key points of across the comments below:

- ... Encourage people to take the units on in addition to their studies. ...majority of the students in both those faculties would have NO IDEA on how to engage Aboriginal and Torres Strait people or other CALD people more generally.
- ...the subjects need more cultural based content ...
- ...making the background more reflective of our culture...
- ...more Indigenous friendly learning processes that the Indigenous community is related...
- It possibly could be offered as an added feature for those that wish.

The following three comments were more conceptual than the others:

- *By linking students from culturally diverse backgrounds with each other...*
- *Courses to enhance greater cultural awareness and appreciation ...*
- *Materials that will highlight the differences between Indigenous and Non Indigenous peoples and the types of racism and its effects...*

There were also some comments that give specific examples. The two comments indicate that using a real-time video conferencing tool could be useful for culturally inclusive learning in Blackboard: "Online Skype sessions for tutoring" and "Video chats about our experiences." Another comment

was that students' constant expression of their thoughts on a learning topic by using an online voting system would be an example of culturally inclusive learning in Blackboard. Those comments imply that culturally inclusive learning in an LMS requires frequent, various and regular communication and interaction using various communication and collaboration tools. Also the comments imply that the units those students have studied have not used real-time communication tools available in Blackboard.

The second question was about what features/functions/services they like the most about Blackboard. 65 students expressed their preferences. The majority of them (44/65) chose the learning resources including lecture notes, tutorial materials, and lecture recordings for easy to access and interestingly, 12 of them responded that they like My Grades / Turnitin where they can submit their assignment pieces and view their grades. Nine chose its intuitive layout and navigation.

Fifty students responded to the third question about their 'dislike' features/functions/services about QUT Blackboard. 29 of them chose three aspects: "difficult to navigate to find content", "unorganised learning resources", and "lack of instructions." The following comments explains the primary reason why such problems occur: "So maybe it is not about Blackboard itself but how the course manages it", "Staff don't seems to utilise the program properly", and "lecturers don't upload material on time." A student also stated, "we use approximately 10% of the features which are basic slide downloading to hard to comment on features." Nine students expressed that they dislike a particular tool like Blackboard Collaborate, Discussion Board, Wiki, Echo 360 (lecture recording), and Turnitin. Ten students expressed some technical issues such as connection stability, functional limitations on mobile view, and resources downloading.

The fourth question was to ask what either or both technical or/and teaching and learning aspects of QUT Blackboard need improvement for culturally inclusive learning. 34 students left some suggestions. The meaningful ones were: Blackboard contents and tools need to be managed by the unit coordinator in a way to ensure that students are able to share annotations, questions and/or comments with each other;

- I only use Blackboard to access course materials and would be hard to be culturally inclusive due to low amounts of interaction;
- Majority of the students would have NO IDEA on how to engage Aboriginal and Torres Strait people or other CALD people more generally;
- I feel that there needs to be more of a 'discussion board' type of learning opportunities where students can post stuff other than social media pages;
- The announcements can be strategically used to people-to-people connections through encouragement and motivation as well as reminders;
- Blackboard needs to be used to "make us feel like we are a part of the community" and in a way motivates us to participate and excel in the unit;
- More culturally inclusive by showing some graphics on the main page, e.g. Aboriginal and Torres Strait Islander flags;
- Various communication and interaction such as one-to-one communication, one-to-many communication, many-to-many communication need to be available;
- Plain English! There are some lectures that lecturers are still not using plain English;
- Maybe mix it up with different cultural information and examples from other countries;
- There could be another type of 'discussion board' where we can talk to other students of the same culture and form a sort of study group.

The last question was to ask why not to participate in communication and collaboration. 51 respondents gave a few common reasons:

- A lot of my units do not use these types of communication tools but from experience of using them in one particular previous unit they are helpful and I would like for them to be used more by all units;

- I find collaboration tools a waste of time because there is no real input or engagement. It's rarely monitored by the lecturers or unit coordinators. How can you engage someone when the expert matter is unavailable;
- I have only used them when it is required by the tutor. I don't find them particularly useful most participants are minimal in their entries;
- Only if it is compulsory, otherwise no. I feel they are largely ineffective simply because not enough people would be willing to participate in order to make it worthwhile. Social media is preferable for student communication and community forming;
- I am unaware of what they are, and barely have enough time due to uni work, part time work, and extracurricular activities.

The responses can be summarised that the students have not been given sufficient experiences of communication, collaboration, and community at Blackboard sites. This is simply because interactive communication tools are rarely used and also the current way of using the tools are very limited. In addition, there is no clear instruction provided on how to use the tools in an efficient way.

5.2 The perceptions and experiences of students and staff

5.2.1 Indigenous students' perceptions and experiences

As shown in the table 5.16, nine Indigenous students cross disciplines were interviewed and their study years were 1.7 years in average.

Table 5.16 Interviewed Indigenous students

Indigenous students	Faculties	Study Years
#1	Law	2nd semester of the third year
#2	Business School	2nd semester of the second year
#3	Health	2nd semester of the third year
#4	Science & Engineering	2nd semester of the first year
#5	Law	2nd semester of the third year
#6	Science & Engineering	2nd semester of the first year
#7	Creative Industries	2nd semester of the second year
#8	Creative Industries	2nd semester of the fourth year
#9	Business School	2nd semester of the first year

The interviewed Indigenous students responded that they are mostly confident to use the functions of Blackboard and navigate it. Their confidence primarily relies on their experiences of having access to learning resources and materials. Student #1's response was a typical answer to the question:

Well I pretty much just use it to access my lecture slides and tutorials, well when I remember to do them as sometimes I forget them and just anything for assessments that's all I do on there. Any other technological stuff is difficult! It took me long enough to figure out how to do that to be honest.

Such confidence also appeared in a description of their strategies of using Blackboard. Although the students expressed that they have slightly different ways of using Blackboard, commonly all of the students take a look at updated items that are informed via email or the announcements. Some specific responses were found in the following two students: Student #2 state, "if I've got an assessment coming up I'd target the subject that I have the assessment for just to see if there

have been updates in the folder itself for the assessment.” Student #1’s strategy is also specific that he/she opens both student email and Blackboard at the same time and then if there is an email from the lecturer and then he/she “glance[s] at the Blackboard and then pretty much go into the lecture slides.” A student’s (#6) favourite function was also the announcements, but he/she expressed its problem, “there is no notifications for any important announcements ... I don’t always go through and see it or read it all.”

All the interviewed students’ favourite experience was a moment when they are noticed that lecture/tutorial notes and/or recorded lectures have been uploaded in a ‘timely manner.’ The second favourite was when the announcements “gives me an idea of what they’re doing within the unit” (Student #2). In addition, a student (#3) expressed that he/she likes My Grade function in which it allows him/her to see grades. Inversely, these statements imply what they dislike about Blackboard - if a lecture/tutorial note has not been uploaded or it has been delayed in uploading. Also the students experienced that it is hard for them to find a resource that they are looking for because many sites have no clear multi-level directory hierarchies or a theme or module based folder system (Student #4 and #5). A student (#8) complained that Blackboard is inconsistently used across units, which they think prevents students from engaging in Blackboard. For My Grade, Indigenous student #3 stated, “I wish they [lecturers/tutors] would put more basic feedback on it ... A lot of lecturers still don’t do it.” Indigenous student #8 also pointed out that the lecturer should let the students know “if things haven’t been marked or if they are going to put it on there or not.”

In addition, the students expressed that they are also frustrated when a recorded lecture is malfunctioning or inaccessible and broken. It seems that the frustration involves technical problems and man-made ones. For example, a typical technical problem can be seen in Indigenous students #1’s response, “when I download [Blackboard] Collaborate [installer and launcher] it takes a while to download and then when you finally download it, it doesn’t work because you’re using Chrome.” On the other hand, a typical man-made problem is:

I find is when there is links with nothing in it, obviously the link needs to be there, but if hasn’t got any information in it you think why am I using this if there’s nothing there. A lot of the time it’s the feedback tool or the groups tool or something when you’re actually inside a unit and I find that is actually a bit off putting. (Indigenous student #4)

Such broken hyperlinks may be caused by the lecturer’s careless arrangement of materials as the Indigenous student #5 pointed out, “you can’t find it as they’ve changed the pathway in the way that you get to your grade so you can’t find it which is pretty annoying.”

The students’ understanding of culturally inclusive education can be summarised with a statement made by student #1, “everybody basically accepts each others’ cultural differences and learns from each others cultural difference and finds a way to incorporate that into a lesson if it comes up”. Their understanding of culturally inclusive learning was very straightforward that it refers to accepting other cultures and reflecting cultural differences in a learning process, “sharing across other people” (Student #7) and “being fair and equal to everyone” (Student #5). Student #2 stated, “Culturally inclusive education to me kind of feels like getting an understanding and not just being an Indigenous person about the Indigenous culture, but being aware of the different ethnicities within the universities.”

To realise culturally inclusive learning in Blackboard, the students tend to think that a separate Blackboard site like the Oodgeroo Unit site can be used as a place for diverse communities. They paid less attention to how culturally inclusive education can be embedded in the current structure of Blackboard units. Presumably they have no experience of cultural inclusivity in Blackboard other than their own community site, which could construct students’ perception that culture and learning are different domains. Student #1 stated:

We have the Muslim community, the Indigenous community, the Asian community LGBT communities everybody is suspicious of each other and they go based off misconceptions and preconceived ideas from other people and ideologies without knowing any facts

Community is having and have that information up there on Blackboard separately so it's an extra little bit of voluntary education without actually having to study for anything.

Interestingly, student #5 addressed that the Oodgeroo Unit site has mostly been used for the first year students rather than other year students.

The students thought that a student role in Blackboard for culturally inclusive education would be "just by accessing it and going on there and sharing There would have to be a moderator for content for any individual that wants to post things" (Student # 1). A similar response was also found in the rest students. For example, student #2 stated, "I guess I'm just more passive in using Blackboard in that sense than active and in that I way I think I could see myself engaging more [as a student]." This is an extension of their past experience of using Blackboard as a digital repository. This is well supported by student #5 and #7, "Blackboard [is supposed to be a place] where you can speak to people in groups," but the tools (like Discussion Boards) are used for question and answer only. This is the reason why social aspects of student role cannot be practiced in Blackboard. Student #6 stated, "[as a student we need] to make friends and network with people and just let them know about getting onto Blackboard and encouraging others to use it and collaborate", but the current units do not offer these opportunities.

All of the interviewed students stated that QUT Blackboard must be used to facilitate designing and building learning communities and enhancing existing communities. In this sense, they expressed some complaints: "as a student being not active enough it [Blackboard] should enhance to becoming familiar with students and really engage with it" (Student #2); "we don't exactly interact with others ... we're not really communicating to each other" (Student #1). An interesting point was found in student #5's response in which some units use social media sites for collaborative learning. The student #5 stated:

some courses go onto Facebook and Twitter and some courses just have their own Facebook and Twitter accounts and just don't use Blackboard most of the time, they only use Blackboard for assessment and stuff, but in terms of collaborative learning they tend to use social media.

This fact implies three things at least: 1) Blackboard has not been used for communication and collaboration anyway, 2) Some staff and students may prefer to use other social media tools for their interaction, and 3) Blackboard is a learning management system and those social media are not, then there is a need for an investigation of whether the quality of communication and collaboration on the social media is pedagogically and educationally sound or a just relative satisfaction to person-to-person interaction.

When the students were asked to find any aspects of QUT Blackboard that need to be improved to achieve culturally inclusive learning, they appeared to focus on teachers and themselves, not on Blackboard. For example, student #5 pointed out, "the barrier is that there is not a lot of facilitation around it other than what the unit coordinator or the lecturers believe need to be facilitated." Student #2 stated, "from my perspective it's students that aren't engaged, or maybe want to engage but they are maybe not confident enough to post in discussion forums." Student #6 requested, "Staff should encourage students to use it [Blackboard for] setting-up groups and communicate with each other." Student #1 expressed that teachers have not been engaged in using Blackboard for communication with students and described:

You can't directly communicate with lecturers or tutors unless you are on Collaborate during a lesson itself, otherwise you pretty much have to email them. I mean they have this discussion board thing, but I've only had one tutor who used it and he only used it to post our weekly assessment items on, we couldn't actually use it to communicate within. He mentioned we could communicate with each other, but nobody did as I'm pretty sure they didn't know how to do it.

If this is the case, teaching staff need substantial support. We cannot discuss this issue in detail as it is out of this project scope, but an exemplary LMS Design presented in the conclusion chapter would be helpful to develop relevant staff training. Student #8 made a very interesting comment on culturally inclusive education in Blackboard:

we need to breakaway from the existing ideas of the western globalised approach. ... if you keep using the same base culture we will continue to go around in circles ... we need to start from scratch and create a whole new approach ... needs to be remodelled. (Student #8)

As expressed by the students, the way of using Blackboard needs to be remodelled. The students expressed their expectations that academic and professional staff need to do more collaboration to understand Indigenous students and practise culturally inclusive education. Student # 1 worried about staff’s insufficient understanding of Indigenous cultures and insisted that cultural knowledge should be available in Blackboard:

A lot of lecturers and tutors don’t have a lot of cultural knowledge ... don’t know how to react to certain situations. ... It would help them obviously if there was some sort of cultural knowledge going on in Blackboard and help them understand where their students are coming from, it would help other students understand where one another is coming from and lower a little bit of the animosity and antagonistic behaviours. I have only had one lecturer understand anything about Indigenous perspectives and that was because she was Indigenous.

In addition, a student pointed out that the interaction between teaching staff is ineffective:

... the interaction between lecturers, unit coordinators and tutors is disjointed and there are often silos in a hierarchical sense and you will get tutors and you will ask them a question and then they say that’s a good question, I need to go to the lecturer and then it just flows. (Student #4)

The student also proposed an interesting solution:

I think that could be improved by opening dialogue on a site like Blackboard, improving the forum use and having a buy in from all levels of management and academic staff. I think students need to be incentivised and made more aware of the benefits of using that collaborative learning.

In summary, the Indigenous student interviews indicate: 1) they have a lack of experience in using Blackboard for communication, collaboration, and community because the sites have not been used in such ways and 2) Indigenous students’ expectations of using Blackboard are very clear in which they want to experience authentic interaction, communication, and collaboration. Without resolving these issues, culturally inclusive learning in Blackboard cannot be achieved because tools for community based learning have not or improperly been utilised.

5.2.2 Academic staff’s perceptions and experiences

Eleven academic staff were interviewed and their teaching experiences were 9.5 years in average.

Table 5.17 Interviewed academic staff

Academic Staff	Faculty	Teaching Years
#1	Education	10
#2	Health	8
#3	Health	3
#4	Creative Industries	11

#5	Creative Industries	6
#6	Education	25
#7	Science	11
#8	Oodgeroo Unit	13
#9	Science	10
#10	Engineering	5
#11	Education	3

The most interviewed academic staff expressed that they are comfortable with Blackboard. Academic staff #1 stated, “Well I use certain features of the Blackboard quite frequently, for example; learning resources, assessment, unit tools like collaborate and grade centre.” Academic staff #4 also stated, “QUT Blackboard is the most efficient way for me to communicate information to students.” Those statements indicate that they are comfortable with some functions of Blackboard. On the contrary, some academic staff stated that they are not comfortable with ‘advanced functions’ or unfamiliar ones. Academic staff #2 stated, “I’m not too comfortable with, Blackboard collaborate, the announcements and I don’t really use blog so much ... I don’t use study smart that much, I don’t use soapbox, I should but I don’t.” Also some academic staff (#5 and #7) perceived that the primary function of Blackboard is a tool for delivery of learning materials. This was the reason why they do not use collaboration tools although they are aware that the relevant tools are available. Some staff perceived that Blackboard is practically unusable, particularly for group communication. This was another reason why they use Blackboard for information dissemination only. When group discussion is needed as Academic staff #6 stated, he/she use “a workable external discussion board (e.g., NEEM platform).”

Academic staff tend to use Blackboard in a one-way directional way to ensure that right messages are delivered to students because they have perceived that students tend not to read materials and items updated in Blackboard. For example, academic staff #1 has used a multi-model approach to ensure that students lead materials. They stated:

I have to give a lot of very clear signs and indicators so I feel the more clear and simple your instructions are ... Sometimes even using some of the rich text format, like bold, in some of the keywords being made bold and made to stand out within items ... the more visual it is it will grab the students attention ... is using Blackboard to send emails to all students, I even send announcements as you can include recipients at the bottom.

This is similar to a “one-stop shop” strategy that academic staff #4 described, “So first and foremost in the learning resources I use the table, I have the weeks and the topic and the lecture notes, the tutorial notes, the readings, the assessment and then I have any other resources like web-based resources.” While academic staff strive to provide students with useful resources as much as they can, they perceive that students do not read them. To increase students’ engagement in learning and learning materials, some strategies were addressed that are to organise simple tests and quizzes (Academic staff #2, #5, #7, #8, and #10). To reduce email traffic, an academic staff used a FAQ in a discussion board (Academic staff #2).

The features/functions/services all of the academic staff like the most about QUT Blackboard is ‘the announcements’ that allows them to email all students at once and “keep[s] a record of all the emails I’ve sent out and in future semesters I can go back and send out the same email” (Academic staff #6). As the most staff expressed that they use Blackboard for information delivery above, the announcements function works as a key tool for them. The second most the academic staff like was My Grade (Grade Centre) and Turnitin because they can mark for their students online and get the results back (Academic staff #1, #4, and #7).

A function they dislike was “setting-up groups for discussion” for a large class because “you have to go and search where the links are” (Academic staff #1) and its interface – not visually pleasing,

boring and unfriendly (Academic staff #6). Also “The way the group comes out, it’s not always in order and the students are always selecting the wrong group” (Academic staff #1). Academic staff #4 explained why they has not used communication tools in their teaching:

what I have found is that in the past when I use discussion forums it is adding probably around about in some instances around 10 extra hours a week to my work load. When I’ve used discussion forum it’s usually in a way that I moderate, but students are expecting me to actively participating in that discussion forum. It’s not much point putting up a discussion forum if it’s going to be a slinging match and I’ve always established what the protocols are but I’ve found that I don’t communicate with students and I haven’t found it to be beneficial to anybody. In fact, one cohort of students said at the beginning of the year and I’ve had them for two semesters – ‘please don’t open a discussion forum, we have so many and we all communicate via social media, so I don’t want to have to join another discussion forum here’ – so I said fine I won’t!

Clearly one of the reasons why academic staff do not use interactive communication tools is that it requires extra time to set up and students’ high expectations of teacher’s participation in communication and collaboration further increases their workload. A typical teaching load of a unit is a one hour lecture and a two hours tutorial per week and staff tend not to spend extra hours other than some hours for teaching preparation and student consultations.

In their understanding of culturally inclusive education, all the academic staff described that it is for “diverse groups of students including Indigenous students.” In practising culturally inclusive learning, they raised an issue with curriculum rather than what they can do in the classroom. For example, academic staff #2 stated, “What I’m trying to say is our cultural curriculum more looks around awareness of Indigenous Australians, awareness of religious and cultural beliefs on our ability to deliver care, but not really bring them into the ability to teach the curriculum.” Some academic staff were unsure of culturally inclusive education because they are supposed to teach based on curriculum within given lecture and tutorial hours but they may try to develop pedagogical strategies to include Indigenous students (Academic staff #4).

On the other hand, to practise culturally inclusive education in Blackboard, a few academic staff proposed, “it needs to incorporate reading and materials from different perspectives ... links to extra readings ... for non-English speaking backgrounds” (Academic staff #1), “words and vocabulary used in Blackboard are unclear to particularly international students and that causes some navigational difficulties” (Academic staff #1), and “foreign students who are studying this and they can get extra materials maybe that would be an option” (Academic staff #3). An academic staff (#4) responded, “discussing all of those things [cultural matters] in Blackboard”, but “I don’t see in terms of how I use it, all it is for me is to disseminate information.” An interesting point here is that the focus was on international students, particularly their English ability rather than cultural aspects and Indigenous students were rarely mentioned.

The academic staff disagreed that QUT Blackboard has been used to facilitate designing and building learning communities and they do not think they have been encouraged to do so. Academic staff #1 expressed:

There are some very wonderful resources in Blackboard like blogs, discussion forums and more interactive abilities there, but we don’t get to use it as much mainly because they are not advertised as much or even Facebook has come in and performed the role of creating their own communities.

Another reason is that not all students get access to Blackboard and particularly Indigenous students and students from lower socio-economic backgrounds are less likely to be engaged in it according to Academic staff #4. An interesting point was that some academic staff tend to think learning communities exist out of their Blackboard units. They have observed that there are Blackboard communities in QUT such as ‘high degree research communities,’ ‘particular ethnic group

communities,' and 'program-based communities' and students also prefer to use other social networking sites rather than Blackboard. Academic staff #5 described:

If you want students to be comfortable with assessment materials you can't push them too much as there are better social networking tools that they prefer better than using Blackboard. There is no need to get them to use Blackboard for them to learn as there are different places they can go to learn also.

As academic staff #8 stated, "[Blackboard] can compliment in the classroom ... it's a back-up and an extra resource." Those statements disclose other reasons other than the workload issue why academic staff do not use interactive communication and collaboration tools in their Blackboard sites: 1) culturally inclusive learning in Blackboard has not been encouraged by the university, 2) they perceive that some student groups tend not to participate such communication and collaboration, 3) communities should exist out of the units, and 4) students and some staff prefer to use social media tools for communication and collaboration.

To facilitate culturally inclusive learning in Blackboard, academic staff suggested that unit coordinators need to think about culturally inclusive learning more and utilise communication tools like discussion board available for students-to-students interaction where culturally inclusive questions can be posed and discussed (Academic staff #1). Furthermore, if there are case studies and scenarios around cultural inclusivity in Blackboard and unit coordinators moderate different discussion each week, staff thought that students would engage in that discussion (Academic staff #1). In addition, academic staff #1 proposed an interesting idea that is to offer "some incentive for students to come in and discuss." Academic staff #3 also suggested that the current top-down approach needs to be changed. He/she stated, "by speaking to people who are using Blackboard like the teachers it's a top down approach and maybe it may be better going from the bottom end user. What are the actual problems you are experiencing? What do you actually need?" To achieve culturally inclusive learning in Blackboard, an academic staff suggested that there is a need for policy on cultural issues and inclusivity and guidelines and templates need to be provided (Academic staff #5). Interestingly, an academic staff claimed that Blackboard (or technology) is not always a good way in promoting cultural inclusivity because:

I personally think that human beings like being with other human beings and the online environment can be rather alienating. When we talk about teaching and pedagogy it's much more fun if you can meet other people, talk to them and have a bit of a laugh and there's even an online discussion forum you are still missing a number of layers of human interaction. (Academic staff #6)

This would be also related to a perception of their role. Academic staff #3 expressed, although their rationales were different, "As far as Blackboard, I don't really know as I never spoke to the students about Blackboard and I don't really use Blackboard that much. My role in the unit was one of the tutors." Another sessional academic (#11) stated, "they don't know that it would exist. I think for the lecturers and tutors to take advantage of those functions so that the students can use it effectively and so they want to use it." This contrast indicated another reason why they do not use interactive communication and collaboration tools is that academic staff are positioning their role of using Blackboard in very different ways.

5.2.3 Professional staff's perceptions and experiences

As shown in Table 5.18 below, two groups of professional staff: Administrative staff and learning designers also completed the interview.

Table 5.18 Interviewed professional staff

Professional Staff	Departments/Faculties	Working Years
#1	Chancellery	4
#2	Law	3
#3	Education	9
#4	Library	3
#5	Research office	3
Learning designer		
#1	Learning designer (Previously a school teacher)	1
#2	Learning designer (Previously an academic and school teacher)	1
#3	Learning designer (Previously a blended learning developer)	2

Professional staff responded that Blackboard is basically used “to promote opportunities and give students the opportunities to click into something if they want to or not” (Professional staff #1). As expressed by the most academic staff, professional staff tended to think that the primary function of Blackboard is to deliver information. Professional staff #1 stated:

One of the ways that I like to utilise it is to have my specific student cohort that I'm targeting for that specific announcement put in the title so whether it's all business students, female justice students, or just all students in total, ... you can make your announcements look great like putting images in there and all of those sorts of things. I guess I don't utilise all of the functions on there or all of the functions that I could.

Professional staff #4 added that embedding multimedia such as videos and adding links to other resources and files are also very effective features of Blackboard. Professional staff #5 as a student support administrator used Blackboard for “editing content rather than actually interfacing through discussion ... very easy to as for your content being able to upload information very quickly and promptly for the students and staff.” Professional staff #5 stated that (HDR) students have become more engaged with the research Blackboard community since they are providing more academic language and support including recording workshop sessions and training resources. On the contrary, some professional staff experienced that Blackboard is not user-friendly for those who are not very experienced digitally. Professional staff #2 responded, “they would find it a lot of effort to get into systems and sometimes I have trouble finding things ... doesn't make it easy for users who aren't experienced.” Also professional staff #4 stated, “It's not very user-friendly and often my students don't know where to go even though I create folders and create specific names to make it more intuitive, but they still get a little lost in it.”

On the other hand, learning designers expressed their concern that QUT Blackboard has not been used in a useful and innovative way. Learning designer #3 stated, “I feel as though they use it more as a suppository for documents and the design of it is very poor and that's not going to encourage students to use it because it's not appealing to students which will of course limit their willingness to use it.” As their role is to support academic staff, the learning designers articulated academic staff's concerns in using Blackboard. Learning designer #1 indicated that there is a notable distance between students' interactive media experience in social network services and that in Blackboard:

A few of the academics are trying to use a lot of social media creation to get the students talking and interacting and when they try to do a similar function in the discussion forum or the blog it seems a bit detached from what the students are already doing in their normal lives.

This was also supported by learning designer #2, “While students are familiar with Blackboard, we can’t assume that they are used to using Blackboard as they may not get to use it as much because other academics might just throw announcements on there and then that’s it, or then the assessment appears.” The reasons were explained by learning designer #3 as follows:

most of the academics here are traditionally face-to-face lecturers. For them to become online facilitators is a different role, so I think expectations of their role for a start and a lot of them don’t use functionalities like discussion forums or the blogs because again this is another level of teaching that they are not comfortable with and you can’t just go from a standard lecture deliver to an online learning facilitator and it doesn’t necessarily come naturally to some people so therefore they don’t have the motivation to use these platforms for that reason

Professional staff’s, including all the learning designers, understanding of culturally inclusive learning is equal participation and acknowledgement of people who have different cultures. For example, “[It is] the opportunity to let everybody share their story. I think it’s about the fact every individual brings their own dynamic to education and ways of thinking” (Professional staff #1) and “takes into consideration others cultures, beliefs and values and making people who have those different cultures, beliefs and values feel valued within the community” (Professional staff #3). However, they were unsure whether or not QUT Blackboard appropriately represents culturally inclusive education because they use it “as an administrative tool to promote events and opportunities that are out there” (Professional staff #1). To achieve culturally inclusive learning in Blackboard, the learning designers stressed that teachers need to be aware of all functions of Blackboard. Learning designer #2 stated, “[It is] how you consider when you set something up it is easy for everyone to access. Maybe it’s being more mindful for images and pictures as opposed to just using text or language. Maybe the way you structure it can be colour-coded for ESL users.”

To achieve culturally inclusive learning in Blackboard, a professional staff thought, “Not directly for Blackboard, but I have thought about it for other online resources” (Professional staff #2). Similarly, professional staff #5 responded that she/he does not consider the context of culture, but demographic: “I would consider that a demographic of the cohort, like their age, other external circumstances and how that impacts on their study more than a cultural background.” While these administrative staff did not see any benefits of Blackboard for culturally inclusive learning, two professional staff who also hold sessional teaching positions (#2 and #4) pointed out problems that are consistent with learning designers. Blackboard in teaching and learning has not been utilised for human-to-human interaction, which has been observed by professional staff #2: “I noticed particularly in relation Indigenous students and I just think physically and spatially they would feel really trapped by sitting at a computer in front of a screen with no one to talk to.” A similar response was also found in professional staff #4. Likewise, the learning designers articulated what thing needs to be done for culturally inclusive learning in Blackboard that is to change a one-way channel to dialogue. Learning designer #2 explained:

the academics are using it to create a sense of community is to have lots of frequent announcements, but this is a one-way channel and it’s a monologue, not a dialogue and so I think if you want to be more inclusive you need to create a dialogue and not a one-way conversation.

Designer #2 re-emphasised that academics should realise the barriers for students: “too much text and too much information and unclear pathways and less interactivity would all be barriers for students.” In doing so, academics should do as follows:

I believe in the presence of the lecturer or the tutor even in an online learning environment and I believe that is key, even just a video at the beginning to put a face to a name of the lecturer. If you can find a way for the students to do that so they have a presence, even an avatar to increase their participation and engagement. I think the thing is there is a lot of studies in regards to modularised learning and they have found that students when they are at a post code level that they don't want to sit through a qualification, they want to know what they want to know and they don't necessarily want to be a part of a community, but at an undergraduate level I think it's really important. (Learning designer #2)

The learning designers observed that only a few academic staff are interested in designing their Blackboard sites as a learning community. An identified barrier to building a learning community in Blackboard was that academic staff tend to confuse a communication function with a community. Learning designer #1 gave a detailed explanation as follows:

we focus a lot on the content and we are talking about those sorts of things like community and collaboration and those are all new and things that need to be developed ... I think a lot of people don't realise what it takes to build a community like this over there and they think that if I set up this forum then everybody will engage in it, but they are not really understanding the importance of particular questioning techniques or being a moderator or being that voice to get the discussions going or getting that support going.

This was also supported by learning designer #2 and #3: "I think it's a lack of understanding of how to teach a cohort that is largely in the online environment because they don't recognise what is required to be present in that space or in replacement of that face-to-face teaching" (Learning designer #3). To resolve such confusion, learning designer #1 and #3 suggested that academics need good examples that they can see what it looks like and clear descriptions of relevant roles and responsibilities, but unfortunately many academics "don't know how to present things on Blackboard or in a culturally inclusive way. I think it's more not using the technology adequately enough for the purpose" (Learning designer #3).

To use Blackboard in achieving culturally inclusive learning, professional staff #3 who holds a sessional academic position articulated a critical point:

It depends on the person who designs the Blackboard site as that person designs the site and assumes a particular thinking process in the students and if the students have a different way of understanding or a different logical sense of thinking for want of a better word, than the person who is looking after the site and the person who is using the site there may be cross purposes, so there's an assumption there.

Although the staff did not provide details about the differences of thinking process among students have different cultural and linguistic backgrounds, she/he stressed that, "a particular thinking process" and "a different logical sense of thinking" need to be reflected in the ways of presenting learning resources, managing student engagement, and facilitating collaboration.

Conclusion: Culturally inclusive Learning Management System design

In this conclusion chapter, we summarise the findings and articulate ten myths in using Blackboard. We unpack the myths and propose an exemplary LMS design framework for culturally inclusive learning.

Implications for policy making

The review of Australian universities' policies and guidelines on culturally inclusive learning indicated that Australian universities acknowledge cultural diversity and endeavour to materialise its values cross sectors. One of the examples was the concept of 'a culturally inclusive university' that articulates the roles and responsibilities of each stakeholder: Individual students' full participation in learning, staff's own cultural awareness, and university's acceptance of alternate perspectives and experiences from culturally diverse 'individual' staff and students. In particular, the universities strive to create an environment where staff and students can practise culturally inclusive thinking, behaviours and interactions and more importantly students can learn from other cultures. In doing so, the universities emphasise that cultural inclusivity must be realised in the classroom. The underlying values of understanding and facilitating cultural diversity in universities are individual differences and self-awareness. The latter is a required ability for teaching staff to implement culturally inclusive teaching, whereas the former has to be permeated into all aspects of teaching and learning such as academic expectations and standards, equal opportunity, learning objectives, assessments, pedagogical strategies, and curriculum design. The underlying value of culturally inclusive education articulated by Australian universities is an 'individual differences' approach to realise 'equity.'

Australian university policies on cultural diversity 1) respect individual students' cultural diversity, 2) articulate the importance of intercultural interactions, and 3) promote cultural diversity as a community asset. These three are well aligned with the hypotheses of the communication dimension of cultural inclusivity framework. On the other hand, there was a lack of evidence whether or not the policies reflect other dimensions of the framework, namely, collaboration, community and interculturality. For example, we failed to find a statement to explain: how cultural diversity exists among various communities, what collaborative process is appropriate to cultural diversity, how cultural diversity reshapes existing communities, and what knowledges and skills stakeholders need to develop to foster cultural diversity. Those questions were valid in the policies and guidelines on an LMS. In the review of nine universities' policies and guidelines, the universities define an LMS as a web-based learning platform where learning resources can be disseminated and communication and collaboration are supported. They articulate the benefits including flexibility, accessibility, customisation, and interaction in the policies and guidelines and the three key pedagogical strategies are information dissemination, formative assessment, and cooperative and collaborative learning. The underlying values of LMS are to facilitate and enhance individual students' self-engagement and self-assessment and self-motivated learning, which is a practical understanding of the 'individual differences.'

The review of the policies and guidelines on an LMS using the four dimensions of cultural inclusivity framework indicated:

- Communication in an LMS focuses on individual students' activities such as posting, participating, communicating and introducing. Collaboration and community are indistinctive and non-dominant.
- Collaboration in an LMS refers to developing individual students' knowledge and achieving individual students' skills for cooperative problem solving and decision-making. Relationships are not articulated.
- Community refers to individual students' ability to make connections with groups. However, it is only valid in community sites that exist out of LMS learning sites.

Consequently, it could be said that the LMS policies and guidelines use communication, collaboration and community indistinctively, and collaboration and community are dimly and vaguely recognised, and cultural diversity and interculturality do not appear. In particular, we failed to find

any specific or contextualised principles and/or strategies of LMS for Indigenous students. Without materialising collaboration and community as pedagogical forms, LMS based learning and teaching has limited room for culturally inclusive learning because those two concepts are critical to realise Indigenous cultural values and pedagogical strategies.

Implications for Learning Management System design

The evaluation results of 50 QUT Blackboard sites cross disciplines indicated: Blackboard has been primarily used for information delivery and dissemination; its interactive communication tools were rarely used; and other supplementary components such as Feedback and ePortfolio were not used at all. There was also a lack of evidence that the most used sections including Announcements, Unit Details, Learning Resources, and Assessments are actually used to encourage students to participate in learning and take benefits of human-to-human interaction other than delivery and dissemination of learning resources. In addition, there was no consistent way to arrange multiple resources, although the primary use of Blackboard is information delivery.

Half of 50 units used Contact US page to present some contact details: name, email and phone number whereas a few units displayed staff photos and office hours. None of the units provided available timeslots for consultation. The majority of the units emphasised that authentic learning happens through on-campus lectures and tutorials and encouraged students to visit the Blackboard sites on a regular basis to download/read provided resources and materials. Some units contained a group work as parts of the assessment and the primary focus remained more likely individual driven rather collective- and relational-driven. The importance of self-study (precisely, personal responsibility) for development of individuals' knowledge and skills by the assessment completion were also frequently emphasised. Some of the units offered a group work for collaboration using Wikis and Discussion Boards, but the student engagement was not participatory, but remained individual students' choice of contributions to the tools. In the interactive communication and collaboration tools, significant findings were: 1) only a small number of students participate in the interactive communication tools and 2) the participating number significantly decreases over the semester. In addition, the majority of the units used 'you' rather than 'us.' Overall, Blackboard was used as a digital repository. Students were positioned as individual consumer of given information, whereas teachers were knowledge transferors and intelligent updaters. The current way of using Blackboard has no room to accommodate cultural diversity, human-to-human interaction, collaborative learning, and a sense of community.

100 Indigenous students with 2.2 study years in average participated in an online questionnaire. In general experiences of QUT Blackboard, the majority of the students (77.9%) expressed that the Blackboard is well used to support and facilitate their learning. 70% on Unit Information (Announcements, Unit Details, and Assessment) and over 75% on Learning Resources rated either *Excellent* or *Very good*. On the contrary, only 26.4% on Interactive Communication and only 24.2% on Collaboration and Community rated either *Excellent* or *Very good*. It should be noted that 26.3% of the respondents skipped the questions and some student explained the reason that they have not been given a chance to use interactive communication tools. In their preferences over holistic, collectivistic and individualistic ways of using Blackboard, 60-70% of the respondents chose either collectivistic or holistic approach to each component of Blackboard: They expressed that they prefer to have more multimedia and additional resources to support community building as well as task completing and they believe that more person-to-person interaction and communication could lead them to experience a sense of community. These preferences also appeared in their written feedback: less interaction encourages them not to use Blackboard; the announcements can be used to encourage and motivate students to participate in human-to-human interaction; if a sense of community is facilitated through communication and collaboration tools, students' engagement in the unit will increase; various types of communication and collaboration are required for their engagement in learning; and teaching staff's active participation in communication and collaboration is critical to culturally inclusive learning.

The interview results with 11 academic staff indicated that academic staff tend to use Blackboard in a one-way directional way to ensure that right messages are delivered to students. The results revealed the reasons why academic staff do not use interactive communication tools: When a

communication tool is utilised, students' high expectations of teacher's participation in communication and collaboration increases their workload; the university policies do not require staff to use communication and collaboration tools; students prefer to use social media platforms for communication and group work because Blackboard interface is not good as those; a sense of community is not necessarily promoted and achieved in Blackboard sites; and academic staff's self-defined position in using Blackboard are inconsistent (e.g., presenter vs. facilitator).

Nine Indigenous students were interviewed and their study years were 1.7 years in average. While the majority Indigenous students were confident to use the functions of Blackboard. This confidence has been built based on the most common way of using Blackboard that is to download materials. Their favourite feature of Blackboard is not a particular function or tool, but 'a moment.' The interviewed students expressed that their favourite moment is when they are informed or notice that lecture /tutorial notes and/or recorded lectures have been uploaded in a 'timely manner.' Inversely, they dislike if a lecture/tutorial note has not been uploaded or it has been delayed in uploading. Also they pointed out that Blackboard is inconsistently used across units and many sites have no clear multi-level directory hierarchies or a theme or module based folder system, which the unit coordinators are supposed to do. For the students, culturally inclusive education means: accepting other cultures, sharing across other people, reflecting cultural differences in learning processes, and being fair and equal to everyone. They articulated that Blackboard is supposed to be a social place where people can interact with each other and build relationships, but they experienced that interactive communication tools have been used for a question and answer kind purpose. Overall the interview results indicated that 1) students have a lack of experience in using Blackboard for communication, collaboration, and community because the sites have not been used in such ways and 2) students' expectations of using Blackboard are very clear in which they want to experience human-to-human interaction, communication, collaboration, and a sense of community.

Five administrative staff and three learning designers were interviewed. The administrative staff tended to use Blackboard to disseminate information for a particular group of students, whereas the learning designers were concerned that Blackboard has not been used in a useful and innovative way. The former is consistent with the perception of the majority of the interviewed academic staff - 'digital repository' and the latter is in line with that of the interviewed Indigenous students - 'interactive place.' All the interviewed staff shared a view that culturally inclusive learning is equal participation and acknowledgement of people who have different cultures. The learning designers and the administrative staff who have teaching backgrounds expressed that Blackboard has the great potential to achieve culturally inclusive education if its interactive communication tools and interface design tools are efficiently used. In other words, this is required for teachers to change their current one-way channel, top-down approach to a dialogue driven multiple-way channel and bottom-up approach. The learning designers stressed that the latter is the way to use Blackboard as a learning community.

A holistic understanding of a Learning Management System

The Australian universities' policies and guidelines on cultural diversity and an LMS are to facilitate and enhance individual students' self-engagement and self-assessment and self-motivated learning. In this sense, an LMS is a web-based learning platform where individual students' flexible, accessible, personalised and interactive learning can be enhanced. As a result, individual students' activities, knowledges, and skills are prioritised in learning design while the dimensions of communication, collaboration, community and interculturality become pieces of (dead) knowledge rather than the conditions for learning. In this sense, there are not much room for collaboration driven learning and community oriented learning and development and practice of (Indigenous) cultural competence. This means that the policies and guidelines need to be inclusive of holistic and collectivistic senses of cultural diversity and LMS. In line with the three categories of an LMS: definition, benefits, and pedagogy, we propose new understandings of LMS for culturally inclusive learning as follows:

- An LMS is a technology rich learning environment where effective and efficient participatory and collaborative learning are designed and experienced towards building open learning community.

- The benefits of using an LMS are to offer multiple communication channels (one-to-many, many-to-one, many-to-many), to facilitate multiple relationships through various collaboration models, and to enhance independent, interdependent and culturally inclusive learning in a holistic way.
- The pedagogical strategies for an LMS encompass cooperative and collaborative approaches, group interaction based learning, participatory learning, problem-seeking and -solving, and authentic learning.

Such understandings of an LMS undermine the pervasive idea among teachers and students that an LMS is only a digital repository. The understandings also reposition students as knowledge producers and teachers as interactive learning managers and interactive learning experience designers. This repositioning is consistent with the needs of Indigenous students.

As revealed from the interview data and the evaluation of 50 Blackboard sites, the findings can be summarised as ten myths that seem to prevent teachers from using an LMS in an interactive way:

- 1) A particular group of students including Indigenous students and students from low socio-economic backgrounds are less likely to use interactive communication tools.
- 2) Authentic teaching and leaning are more effectively achieved in the classroom than an online learning environment.
- 3) Only a small number of students are interested in using interactive communication tools and the majority of students feel that engaging in an LMS other than downloading given materials is a waste of time.
- 4) The majority of students prefer to use social media platforms for peer-to-peer communication and group work because Blackboard is functionally and aesthetically limited.
- 5) A teacher's primary role in using an LMS is to deliver and disseminate information.
- 6) An LMS must be used to support the traditional ways of teaching and learning and thus there is no need for pedagogical innovations for it.
- 7) It is the individual students' responsibility to participate in interpersonal communication and collaboration in an LMS.
- 8) A teacher's participation in communication and collaboration is an extra work or optional.
- 9) University policies do not require teachers to utilise communication and collaboration tools of an LMS.
- 10) Cultural inclusivity is achieved most efficiently out of an LMS and a sense of community should be realised in a separate LMS site.

These myths are intricately connected to the lack of ontological and axiological understandings of cultural inclusivity. The Indigenous students' expectations and the learning designers' recommendations break down the myths as follows:

- 1) Due to holistic and collectivistic cultural values, Indigenous students are expecting more human-to-human interaction that should occur in an LMS.
- 2) An LMS site is an interactive learning space and an ideal place for authentic teaching and leaning because it offers flexible and cross channel interactions.
- 3) A majority of students are interested in using interactive communication and collaborative tools and their lack of participation and decreased engagement are caused by an ill-informed and unstructured approach to the tools.
- 4) Students prefer to use social media platforms for communication and group work not because of functional limitations of Blackboard, but because of no encouragement of using interactive communication tools available in Blackboard. Pedagogical and educational quality of communication and collaboration in social media platforms is in doubt.
- 5) A teacher's primary role in using an LMS is to develop and sustain a learning community. Information dissemination and delivery needs to be undertaken in a way to facilitate students' engagement and participation.
- 6) Interactive and participatory learning in an LMS always entails pedagogical innovations because an LMS as an interactive learning environment requires designing diverse

- communication channels and collaborative models towards building a learning community.
- 7) Individuals' motivation and needs for communication are socially and culturally contextualised so that communication as a social activity needs to be designed and facilitated.
 - 8) A teacher's active participation in communication and collaboration lays the pedagogical foundations for holistic teaching.
 - 9) University policies do require teachers to promote inclusive teaching and cultural diversity and to facilitate improved understandings and positive interactions between culturally diverse communities.
 - 10) Cultural inclusivity is one of the most fundamental concepts for building a learning community. If its integration is rejected in any of learning elements: curriculum, pedagogy, student activities, and assessment and LMS design, it becomes subordinate to the dominant culture.

An LMS is not a digital repository although it can be used in such a way; Students should not be treated as individual consumers of given information; and teachers should be neither knowledge transferors nor intelligent updaters. Inversely, an LMS is an interactive learning environment; students and teachers are co-creators of knowledge and co-owners of learning content and activities; teachers are communication facilitators and moderators. These are holistic ways of understanding education and the foundations for culturally inclusive learning. In this sense, the following table would be a useful exemplary LMS design framework for culturally inclusive learning. By using the Blackboard components: Unit Information (UI), Learning Contents (LC), Interactive Communication (IC) and Supplementary Functions (SF), we articulate the four dimensions of cultural inclusivity: Communication, collaboration, community, and interculturality as an LMS design framework for culturally inclusive learning that offers a holistic approach to an LMS.

An Exemplary LMS Design with the Dimensions of Cultural Inclusivity

LMS	Communication	Collaboration	Community	Interculturality
Unit Information (Information dissemination to <i>Information sharing and value practice</i>)	<ul style="list-style-type: none"> - Posting a visual representation(s). - Mapping a learning journey. - Informing required engagement types and levels in the LMS. <p>E.g.: Announcements section is used to provide daily and/or weekly studying indicators and to highlight potential barriers and alternative solutions with some words of encouragement.</p>	<ul style="list-style-type: none"> - Providing detailed grouping processes. - Offering interpersonal communication design. - Offering intrapersonal communication design. <p>E.g.: Assessment section is to provide possible informal collaboration via provided communication tools. Students complete an assigned task and activity in a discussion forum. Their participation and contribution quality are marked.</p>	<ul style="list-style-type: none"> - Presenting information written with 'we/us' rather than 'you'. - Articulating pre-existing relationships. - Promoting collective values such as harmony and interconnectedness. <p>E.g.: Unit Objectives section offers students to participate in / contribute to the creation / selection of visual representations for the unit.</p>	<ul style="list-style-type: none"> - Understanding pre-existing relationships and cultural needs of the stakeholders. - Developing relationships towards building a learning community - Fostering a sense of belonging and community membership. <p>E.g.: Unit Details section is to provide a weekly learning plan in a visual form by articulating achievable intercultural competencies such as self awareness, empathy, tolerance of ambiguity, and perspective-taking.</p>
Learning Contents (Self-study to <i>Group study and Contributions to the learning community</i>)	<ul style="list-style-type: none"> - Knowing where cultural/linguistic diversity of learning contents are available. - Providing linguistically/culturally different learning contents. - Facilitating sharing of culturally different learning resources. <p>E.g.: Encourage students to share their own learning resources including translated resources with others in a discussion forum.</p>	<ul style="list-style-type: none"> - Acknowledging that shared goals have a great impact on learning outcomes. - Facilitating collaborative understandings of learning contents (peer tutoring). - Encouraging students to practise collective approaches to learning contents. <p>E.g.: Design learning contents with various formats that can be more efficiently understood through assigned/suggested roles.</p>	<ul style="list-style-type: none"> - Acknowledging that a collaborative understanding of a learning content can improve the quality of teacher profession as well as enhance individuals' learning. - Providing a chance to understand a learning content from different cultural perspectives. - Encouraging students to achieve new knowledge construction that contributes local/professional communities. <p>E.g.: Offer a chance to exchange their roles for a holistic understanding of a learning content.</p>	<ul style="list-style-type: none"> - Understanding pedagogical benefits of self-study and skill/interest mix based group study. - Practising a third person approach by being aware of one's own perspective. - Creating a relational approach to a problem by adopting different thinking frameworks. <p>E.g.: Assessments/activities offer various themes that a group of students can choose.</p>

<p>Interactive Communication (one person-to-many persons communication to Groups-to-community contributions)</p>	<ul style="list-style-type: none"> - Understanding that various communication channels have different functions and features. - Providing various communication channels, one-to-many, many-to-one, many-to-many. - Encouraging students to share their self-reflection on weekly learning with peer students. <p>E.g.: Designing question/theme based discussion forum structure and/or personal interest based blogs.</p>	<ul style="list-style-type: none"> - Understanding that various communication channels offer diverse perspectives of problem solving and enhance critical thinking. - Offering a choice of a preferred communication channel to interact with peer students. - Offering collective problem solving processes based on individual roles. <p>E.g.: Designing a public writing process via blogs that is aimed at inviting others to read and provide feedback.</p>	<ul style="list-style-type: none"> - Acknowledging that group-to-group interactions make the learning community cohesive. - Designing group-to-group interactions by using appropriate communication tools. - Facilitating group-to-group interactions with clear outcomes in line with assessment. <p>E.g.: Designing a collaborative writing to construct a new knowledge via wikis in a team competition setting.</p>	<ul style="list-style-type: none"> - Being aware of cultural/personal preferences over communication tools. - Being able to utilise various interactive tools for communication and collaboration. - Being able to develop contextualised intercultural competencies <p>E.g.: Using a web conferencing platform (Blackboard Collaborate) as a learning space for real-time peer-assessment through participants' oral presentation of their works.</p>
<p>Supplementary Functions (Additional to Customisation and engagement)</p>	<ul style="list-style-type: none"> - Informing that individuals' track records of the LMS access are available. - Reminding that there are various participation types and levels. - Aiming to build pastoral relationships with using the track records. <p>E.g.: Using individuals' access to information of the LMS site for personalised / customised learning.</p>	<ul style="list-style-type: none"> - Understanding pedagogical benefits of group consultation with the teacher. - Offering a question construction in a collective manner. - Encouraging a group approach to the teacher. <p>E.g.: Using Contact Details section in connection with Announcements function to offer a group consulting based on a similar category of questions identified in communication channels.</p>	<ul style="list-style-type: none"> - Understanding that a vibrant learning community with an ethos of mutual respect and support brings about great learning. - Understanding pedagogical limitations on the grade system for building a learning community. - Empowering a group to request an additional tutoring. <p>E.g.: Using Grade Centre to provide a whole class or a particular group with overall feedback to assessment/task completion.</p>	<ul style="list-style-type: none"> - Understanding that collaboration entails intra-individual competition. - Being able to develop questions for a group / whole class. - Encouraging students to make contributions to their own culture. <p>E.g.: Using a survey tool to share students' ongoing engagement and participation in learning.</p>

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