

Portal Pedagogy: From interdisciplinarity and internationalization to transdisciplinarity and transnationalization

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Education in the twenty-first century is characterized by narratives of global connectivity. Opportunities offered by digital technologies, connectivity through mobile platforms, and social media, reinforced by changing expectations of students and parents, have put pressure on universities to reimagine global learning and flexible delivery contained in a modern higher degree. The higher education sector has sought to address these developments in a number of ways: through intensified student exchange and recruitment, the establishment of off-shore campuses, an expanding online delivery presence, and by increasing flexibility of delivery for on-campus students. While each of the current options taken up by universities addresses different aspects of these trends in the sector, all have inherent problems and imbalances in their approach.

In this paper we reflect on the effectiveness of the current trends in international education and propose that the innovative 'Portal Pedagogy' approach outlined here makes a significant contribution to higher education. The pedagogy connects geographically distant students through technology and curriculum to create a student-centred community of inquiry neither bound by disciplines nor countries. Bringing together cross-disciplinary interaction, student-driven learning, and technological solutions to pedagogical and logistical challenges, Portal Pedagogy offers a hybrid model that seeks to go beyond the limitations of online delivery and student exchange programmes in order to offer a flexible, meaningful, and globalized learning experience.

Keywords: globalization; internationalization; open-space learning; virtual spaces

Introduction

Education in the twenty-first century is characterized by narratives of global connectivity. Globalization¹, which is often understood as a primarily economic phenomenon, has impacted upon the exchange of ideas, models, and people in the realm of education through contemporary drivers in higher education (HE) that promote agendas based around internationalization. Two forces within HE illustrate the heightened interest in internationalization: increased focus by institutions to pull in international students to their campuses; and a push to provide international experiences for their own students (Kim, 2010). Students who are unable to travel internationally for their studies are offered experiences of the global world through digital education, with its flexible curriculum and educational delivery. Digital technologies, connectivity through mobile platforms, and social media, in tandem with changing expectations of students and parents have

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put pressure on the sector to reimagine the kind of global learning and flexible delivery contained in a modern higher degree. The HE sector has sought to address these developments through the implementation of a series of strategies, such as:

- intensified student exchange and recruitment
- the establishment of off-shore campuses
- an expanding online delivery presence
- increasing flexibility of delivery for on-campus students.

While each of the current options taken up by universities addresses different aspects of these trends in the sector, all have inherent problems and imbalances in their approach.

This position paper reviews current trends in international education and the role of transdisciplinarity and transnationalism in higher education. It sets the landscape for our own work 'Portal Pedagogy', which is a hybrid model of current approaches. It seeks to go beyond the limitations of current models, in which on-campus study, online delivery, and student exchange programmes are often considered separately, in order to offer a more flexible, meaningful, and globalized learning experience to students. Various economic, social, political, and personal reasons prevent many students from being able to take part in traditional exchange programmes. Curriculum design in particular courses, especially professional degrees that may require laboratory or studio work, industry placement, teaching or medical rounds can also limit students' ability to travel on exchange. Our Portal Pedagogy approach brings together cross-disciplinary interaction, student-driven learning and technological solutions to address these limitations. It offers an alternative form of delivery that adopts aspects of both student exchange and virtual-learning models. Portal Pedagogy connects geographically distant students through technology and curriculum to create a student-centred community of inquiry neither bound by disciplines nor countries. This community engages in meaningful shared learning experiences shaped by the unique physical and disciplinary environment in which they learn.

The undergraduate unit 'Forms of identity', which is the case study we use to illustrate Portal Pedagogy, was offered at both Monash University (Australia) and the University of Warwick (UK). It was taught over an intense block of five weeks consisting of nine two-hour sessions, each designed by a different subject specialist, and facilitated by a core team of academics. The unit aimed to explore notions of individual identity, including national, bodily, gendered, racial, and spiritual identity, as well as the increasing prominence of hybrid, border, and marginal identities, and the notion that identity may shift, be fragmented, or exist in simultaneous plurality. This paper reflects on the effectiveness of the 'Forms of identity' unit, and we propose that our Portal Pedagogy approach makes a significant contribution to the area by offering students an experience that transcends boundaries on a range of levels: between students, students and teachers, disciplines, and even countries. This learning and teaching project will be explored and analysed in detail below.

Global context of internationalized higher education

In January 2013, Elizabeth Gibney set down in the *Times Higher Education* supplement five trends that she asserted were changing the face of HE globally. These were:

- (1) the boom in undergraduate study
- (2) the growth of private provision
- (3) students having to pay their way
- (4) new regions driving global competition in research
- (5) internationalization that will grow broader and deeper.

Perhaps most important among these is the last trend, internationalization, both because of the focus on this in the official rhetoric of HE institutions, but also because it runs as a uniting thread through the other four trends. Internationalization and global citizenship are buzzwords in academia (Davies, 2008) that can be found in many modern university graduate attribute statements. However, both terms prove challenging to define. As Kim (2009) points out, while the OECD (1999) defines the internationalization of HE as the integration of an international or intercultural dimension into all university activities, there is much difficulty in arriving at a suitable definition (Knight, 2008; Yang, 2002). Kim (2009) states that while such a discourse appears supportive of, or even predicated upon, interculturality, in practice many internationalization plans focus on international student recruitment statistics, and the realities of academic mobility are shaped by market-influenced research competition. Claims to global citizenship can often be reduced to the result of any overseas experience or simply having international students in the classroom. We understand internationalization and the drive to internationalize in the HE sector in the terms set by Kim (2009) and we understand that key to this are the claims made by many universities in their graduate attributes to produce global citizens. A quick glance at the websites of the leading Group of Eight² universities in Australia shows this cultural and global competence as key to their generic graduate attributes for students. Statements such as ‘attuned to cultural diversity’; ‘have an understanding of the social and cultural diversity in our community’; ‘have a broad global understanding, active global citizens’; ‘responsible and effective global citizens’; ‘exhibit cross-cultural competence’; ‘culturally aware and capable of respecting diversity’, are just a few examples among many of Australian universities’ statements on the attributes of their graduates and how these link to a broader view of students being part of an interconnected global environment.³ In addition to these broad statements aimed at fostering global citizenship for its presumably inherent qualities, universities are also faced with important economic drivers in relation to global engagement, in particular, the impact of the international student market. In Australia, international education contributed \$16.3 billion in export income to the Australian economy in 2010/11 (ABS, 2011).

Recruitment of international students and the development of international exchange partnerships are often viewed as a kind of guarantee of global citizenship. However, it is increasingly recognized that study abroad programmes may not result in all of the perceived and potential benefits. As Penn *et al.* (2013) reveal, being temporarily in another country can make it difficult to integrate, especially as many exchange students often end up living in dedicated international student housing and socializing primarily with other exchange students. They cite a host of recent research, such as that of Amit (2010), who declares that the often promoted sense of global citizenship thought to derive from student exchange is not supported by hard evidence, and rather, is largely underpinned by a longstanding belief in the educative value of travel. Bochner and Hutnik (1985) too demonstrate that just living in proximity to people from another culture does not automatically develop relationships. Rather, as Kim (2009) argues, interculturality requires more than mere tolerance, and other forms of engagement are essential.

In a study that examined the short-term study abroad experiences of business students, Hallows *et al.* (2011) discuss the inherent challenge in shifting students’ approach to learning in another cultural context, noting that ‘[s]tudents must acquire new skills and information but also radically transform their approach to thinking and learning’ (93). This is not acquired naturally just through the virtue of being in another cultural context. Rather, it is experiencing a nexus of difference, where new knowledge can be applied – not just acquired – that enables deep structural shifts in students’ thoughts, enabling them to view the world differently and opening potential paths for broader changes in self-perceptions, actions, and interactions (Hallows *et*

al., 2011; Kim, 2010; Mezirow, 2000). Such studies indicate that exchange is only a guarantee of an international experience in the sense that a student has travelled; it is no guarantee of an internationalized learning experience.

There are many challenges that arise in the face of the increasing expectation that students have access to an international learning experience that exposes them to other student cohorts, leading scholars in their fields, and different, ever-expanding communities of inquiry. The most obvious of these are the financial implications for universities of both staff and student short-term and long-term mobility, and the additional costs that students become obliged to carry if they wish to participate in what are increasingly constructed as essential parts of the HE experience. In addition to the issues of equity that arise from the economic constraints of internationalization, is the challenge formed by the expectations of students, who increasingly expect a flexible and meaningful connectedness via their own communities of inquiry beyond traditional classroom scenarios and directed online interactions. The Portal Pedagogy model discussed in this paper offers an alternative option for students to include in their learning, where students are exposed to an international experience without the expense of travel, but with potentially richer personal and classroom interaction than may be experienced through the prevalent online methods explored in the following section.

Current responses to this context

Attempts by universities to address both the demands and associated challenges of the rapidly changing globalized HE sphere have addressed aspects of the issues raised through short-term student exchange, off-shore campuses (internationalization), distance and 'blended' learning, as illustrated by the following international case studies. To date, a number of initiatives have addressed internationalization and interdisciplinarity in HE, with a view to engaging students with a global world, often including different forms of remote teaching and learning. Many of these projects incorporate some form of blended learning, seen as consistent with contemporary HE values and as enhancing meaningful learning (Garrison and Kanuka, 2004). One of the clearest definitions of blended learning derives from the work of Pankin *et al.*, namely that blended learning consists of 'structured opportunities to learn, which use more than one learning or training method, inside or outside the classroom' (2012: 1), and includes a variety of instructional methods, delivery methods, scheduling, and levels of guidance.

Two remote teaching and learning initiatives set outside traditional classrooms are distance education and virtual (or online) learning. The first initiative predates the advent of an online learning environment.

Distance education

Distance education (DE) has been commonly used across secondary and tertiary education to support students whose circumstances prevent them from attending classes in person. Although distance learning has been considerably transformed by the internet (Harper *et al.*, 2004), as Guri-Rosenblit (2009) points out, distance education and e-learning are distinct. Where distance is not a defining characteristic of e-learning, DE has as its primary aim the provision of learning opportunities, often via media and two-way communication, to students unable to attend campus-based classes (Bell and Tight, 1993; Guri-Rosenblit, 1999, Guri-Rosenblit, 2005).

Virtual learning

The use of virtual or online learning has increased dramatically in recent years, and some of its most frequently cited benefits include affordability and accessibility. One use of online technologies to these ends is the synchronous remote classroom (Warriem *et al.*, 2013), part of the Teach 10000 Teachers project in India. Lectures are transmitted from a single location to participants who attend synchronously from their own, geographically dispersed, classrooms.

A similar project was undertaken by Kapralos *et al.* (2003), who explored ways to utilize an audiovisual sensor to aid synchronous distance learning with one or more remote classrooms, giving the teacher a panoramic view of the class and allowing students to gain the teacher's attention via either gesture (raising their hand) or verbally, as in a face-to-face (f2f) setting. While these modes have the potential to be somewhat teacher-centred, the current project offers the opportunity to disrupt this dynamic, through the collaboration of two entire classroom groups, with two teachers and two cohorts of students.

Virtual classrooms are defined by Griffith-Boyes and Aberdour (2013) as real-time, interactive experiences, as opposed to a lecture, a presentation, or a one-sided broadcast. Hastie *et al.* (2010) propose a blended synchronous learning model, which integrates physical and cyber classroom settings. The model consists of five elements: (1) the cyber classroom; (2) the physical classroom; (3) the teacher; (4) the student; and (5) a number of (other) classrooms or participants. The authors claim that the application of synchronous learning technologies and pedagogies has helped to maximize interconnectivity and educational collaboration over a period of seven years.

At its best, virtual learning is argued to promote problem-solving, critical thinking, a sense of a learning community, and the development of other twenty-first century skills in collaboration with others (Zygouris-Coe, 2012). Businesses have long harnessed communication tools to collaborate internationally, and as Starke-Meyerring and Andrews (2006) point out, increasing numbers of professionals are using digital tools to work collaboratively across cultures, locations, and time zones. Such practice provides not only a model for the types of collaboration that may be possible in educational settings, as many educators have already realized, but also a strong impetus for the greater inclusion of such opportunities in HE as a form of workplace preparation.

Despite the oft-repeated call for pedagogical models that incorporate elements of both online/distance and face-to-face modes to date, Garrison (2009) argues that DE has not yet made full use of the collaborative potential of online learning. Similarly, it appears that reference to DE theories in online-learning literature are lacking (Garrison, 2009). Furthermore, as Bingimlas (2009) argues, despite recent developments, there remain a number of extrinsic (time, support, and technology) and intrinsic (attitudes and capacities) challenges, which are often heightened when two or more institutions are involved.

A report in the UK in 2009 on the impact and use of Web 2.0 tools revealed that one key expectation of tertiary students was the availability of face-to-face contact with staff (Committee of Inquiry into the Changing Learner Experience, JISC and HEA, 2009). According to the report, students desire traditional approaches, most importantly personal contact in a modern context, in other words in an online environment. The potential for a learning experience that enhances campus-based classes via technology while simultaneously providing an international experience to those who may be unable to participate in a traditional exchange, provides the starting point for our approach, as outlined in the 'Forms of identity' case study below. As Hall and Knox state 'it is no longer feasible to think of distance and f2f delivery modes as a dichotomy' (2009: 65).

The next section outlines our Portal Pedagogy project, which has at its heart the goal of a more profound learning experience, facilitated through bringing together an international cohort in a space that transcends national and university boundaries – a 'trans-space'. The establishment

of a globally connected learning network that also shares authentic, real-time class experiences opens spaces of difference that offer the possibility of an enriched learning experience that is international.

Portal Pedagogy: A new form of learning and teaching

Our response to the growing need for students to engage in both interdisciplinary and international experiences as part of their tertiary education has taken the form of an interdisciplinary undergraduate unit, 'Forms of identity', co-taught by Monash University (Australia) and the University of Warwick (UK) via an innovative new international portal teaching space using what we term 'Portal Pedagogy'. This is a method of practice and teaching that develops transferrable transdisciplinary skills in a transnational learning environment. The hybrid teaching environment in which this pedagogical practice takes place enables the use of this method of teaching, but does not, on its own, define the model. Rather, Portal Pedagogy is an international approach to teaching facilitated by the physical portal space and its accompanying technology. We understand pedagogy as theories of teaching, curriculum, and instruction, and Portal Pedagogy as a form of critical pedagogy that utilizes the international portal in seeking to address issues relating to the distribution of power and knowledge in educational settings (Richards and Schmidt, 2002: 389).

As part of the Monash–Warwick alliance, in 2012/13, a group of academics at both institutions undertook to create an environment that would bridge both virtual and real-world spaces designed to offer a portal or window on to the other side of the world. This Portal Pedagogy utilizes a hybrid teaching environment, blending f2f and virtual modes of learning and teaching within and between two purpose-designed classrooms, meeting what Westbrook (2006) sees as the need for hybrid virtual and classroom course integration. A recently commissioned report by Universities UK's International Unit and the Leadership Foundation for Higher Education highlights the 'Forms of identity' unit, stating that the relationship 'may be pointing the way to a new kind of pedagogy', as reported in *Times Higher Education* (Grove, 2013).

The portal space and Portal Pedagogy are informed by Open-space Learning (OSL). OSL is based upon the understanding that 'learning should be grounded in discovery, enquiry and action, with stress on the development of social intelligence' (Monk, 2011c: n.p.). Central to this understanding is the space in which learning takes place. This space should ideally be flexible, non-hierarchical, and collaborative and learning processes should be negotiated by the participants. OSL recognizes the limitations of disciplinary knowledge and favours active interdisciplinarity that seeks to support students in reaching transdisciplinary outcomes. In the context of this paper, the terms 'interdisciplinarity' and 'transdisciplinarity' can be fruitfully contrasted and lead us to question the notions of 'internationalization' and 'transnationalization'.

While 'interdisciplinary' simply refers to the inclusion of two or more academic disciplines normally considered distinct within an educational or research environment, transdisciplinary may be best understood as a framework encompassing more than one discipline that acts both between and across disciplines. Likewise, while 'international' refers simply to the involvement of two or more nations, 'transnationalism' evokes a sense of going beyond national borders. In Portal Pedagogy, much like OSL from which it stems, the 'trans' prefix is of particular importance, expressing the notion of open spaces, the deconstruction of barriers, and the bridging of gaps (Monk, 2011a: 4) – either disciplinary or geographic. Monk (2011a) defines such spaces as transgressive (where barriers between students and teachers are suspended), transitional (as learning exists between defined spaces), transcendent (moving beyond traditional learning styles), transrational (requiring both intuitive, physical responses as well as rational information processing), and transactional (where ideas are exchanged freely and openly).

Both institutions developed an identical international portal space to overcome the physical distance between Melbourne and Warwick, in order to allow students at both universities to collaborate as a single cohort, and to strengthen the Monash–Warwick learning community. The teaching rooms at both institutions that house the international portal's screens have a very large projected space at the front (and a smaller one at the rear) of the room – the 'portal' – along with microphones built in to the environment, flexible furniture, and decor designed to stimulate learning and create the sense of a shared space (technical and design details are provided in Section 5.2).

Here, in the Australian evening/UK morning, students and staff are challenged to consider their notions of 'space' and what is 'real', engaging with classmates and colleagues on the other side of the world via the live video-link projected through the portal, which, according to the students, allowed them to talk as if they were in the same room. The unit attracted students from diverse disciplinary backgrounds, which resulted in fruitful discussion not only across the cultural and geographic boundaries bridged by the portal, but also among students from different faculties and areas of study. Students were able to develop their understanding of physical learning spaces and virtual identity, as well as take part in lively discussion and debate surrounding topics as diverse as national identity, mental health, narrative, the media, history, science, translation, and online domains – but that, ultimately, all focused on the core premise of identity. In this space created by the portal technology no one is the host or guest, and even the teacher's traditional position is reconceived (pedagogical design details are provided in Section 5.1).

The notion of a portal in online education (and, indeed, on the internet more generally) has existed for a long time. Deriving from the Latin *portalis* meaning gate or other entrance, in an online context (and as one of many architectural metaphors used on the internet), portal refers to a web page 'providing an entry point for sources of information and data from within a site, as well as links to external sites from other providers' (Crystal, 2004: 89). A brief review of the use of the term 'portal' in education online shows that the term is also often used interchangeably with 'interface' or 'website'⁴. Via the Portal Pedagogy project, we are attempting to blend the traditional notion of a portal as a gateway to a physical space, and as a gateway to an array of online resources in the form of a community of inquiry.

Creating a community of inquiry

Today's students have many powerful factors at play in how they conceive of themselves and others. Global perspectives encourage us to rethink Lave's (1988) idea of situated learning theory, where social interaction and collaborations are essential components of learning. This was further elaborated by Lave and Wenger's (1991) suggestion that learning is situated within a culture, activity, and a particular context. Global youth culture and the powerful economic and political pressure it wields through virtual engagement has created a new kind of 'imagined community' that stretches Benedict Anderson's (1991) definition. For today's students, there is a new realm of imagined communities, in which the most disparate individuals may form connections. These can be transitory or deep connections, but nonetheless they form part of a global connectivity and multiple communities. Too often, these alternative communities of inquiry that students appear most engaged in are marginalized from the formal teaching and learning process, or worse, artificially integrated.

As Aykol and Garrison point out, '[t]raditional higher education has long held that a community of scholars and inquiry is the ideal for the construction of deep and meaningful

knowledge' (2011: 234). A framework for using the concept of the community of inquiry as its point of departure was initially developed by Garrison *et al.* (1999) to respond to the specificities of online and blended learning environments. The framework has three central elements: social, cognitive, and teaching presence, all of which are structurally interdependent in the processes of more profound educational engagement (Aykol and Garrison, 2011). The Portal Project fosters engagement between students in ways that broadly align with this framework. The development of climate and interpersonal relationships; the progressive phases of inquiry leading to a resolution; and teaching that provides leadership address the three elements of social, cognitive, and teaching presence respectively, with the added dimension that the students are necessarily placed in a position of difference, allowing the participants in the Portal's 'community of inquiry' potentially to move beyond acquisition of knowledge to a more transformative learning experience (see Aykol and Garrison, 2011).

The nature of the community of inquiry fostered in the Portal Project allows for the community independently to transcend the classroom environment and for this to happen organically, directed by students rather than by educators. In turn, this also led to students developing their own, out-of-class community of inquiry via a Facebook study group. The interdisciplinary and pedagogical design of the unit that enabled this transformation, as well as the physical and technical specifications of the portal itself, are described in the following sections.

Interdisciplinarity, transdisciplinarity, and the third space as the nexus of difference

As previously outlined, the 'Forms of identity' unit aims to transform what is initially an interdisciplinary subject consisting of a number of modules into a transdisciplinary unit through student and staff engagement via the portal. As Monk outlines, the 'trans-space' exists 'by virtue of a dialectical process between various theses and antitheses that, in the moment of their opposition, create an "open" space in which new syntheses develop' (2011a: 4). This concept is related to the extensive work of Homi K. Bhabha and Stuart Hall, whose notion of the third space is closely related to the open space. Furthermore, Fernando Ortiz's (1947) work on the process of 'transculturation', which focuses on the melding of cultures rather than the acquisition of a new culture at the expense of another culture, not only adds another useful 'trans' prefix to the OSL lexicon, but neatly describes the ways in which different disciplines, different faculties, and different kinds of learner are able to operate creatively and freely in open learning spaces, creating something uniquely different by bringing together different cultures of knowledge.

Teaching and learning that crosses both national and disciplinary borders, while in step with many current drivers in the HE sector (see Kim, 2009 and Gibney, 2013), inherently challenges the ways in which many universities conceive of and design learning experiences and spaces, which are frequently geared toward information download (Monk, 2011b). The crossing of borders – cultural, national, or both – is embedded in interdisciplinarity and internationalism. However, rather than remaining as distinct subject areas, or distinct cohorts of students, in the transdisciplinary, transnational space (a third space), a hybrid site emerges in which culture is produced, not just reflected upon (Bhabha, 1994), and participants are more likely to share a unifying experience. While in interdisciplinary endeavours the conventions of one discipline are applied to another, in the transdisciplinary stage the borders and boundaries between disciplines are broken down within the open space (Monk, 2011b).

Design of an open space

Three key elements of design were involved in the development of our international portal open space, namely the pedagogical design in terms of the curriculum content and teaching mode, which informed both the spatial design in terms of the aesthetic and physical set up of the rooms, and the technical design in terms of the equipment used to facilitate communication across the two cohorts.

Pedagogical (theoretical and behavioural)

According to Boud and Prosser (2001), learning design must engage, acknowledge the learning context, challenge learners, and provide practice. As Benson and Samarawickrema (2009) point out, Moore's (1980) theory of transactional distance provides a way to analyse pedagogy by considering the notion of separation between learners, and between teachers and learners. In open learning spaces, these traditional roles are suspended in favour of the tutor/facilitator uncrowning power. In the present context, distance is conceived of as involving not only geographical distance, but also disciplinary distance, bridged via dialogue, course design, and learner autonomy (Moore and Kearsley, 2005, cited in Benson and Samarawickrema, 2009), in order to foster a community of inquiry. As Monk (2011a) argues, bridging divisions and modes is crucial to trans-space.

Facilitating learner autonomy, course design, and dialogue that performs this bridging function requires careful design and a number of competences. One of the tasks Guri-Rosenblit (2009) identifies for the development of education in the digital age is the redesign of roles in distributed teaching. O'Dowd (2013) describes the competences of the 'Telecollaborative Teacher' as encompassing organizational, pedagogical, and ICT/digital aspects, as well as a range of important attitudes and beliefs, including a belief in the intrinsic role of culture, and a willingness to compromise and collaborate with partner-teachers and students.

According to Keel (2011), the co-present or f2f classroom is viewed as the gold standard for education, given its communicative richness (Boden and Molotch, 1994, cited in Keel, 2011) and the basic human compulsion for proximity. Thus, the ability for students to speak freely as if co-present was viewed as vital. As Koh and Hill's (2009) study of student perceptions of online group work revealed, social interaction and presence play a key role in enhancing student learning and satisfaction, which can lead to a sense of belonging and freedom of expression, and contribute to group cohesiveness (Garrison and Vaughan, 2008).

In addition, as Irons *et al.* (2002) demonstrate, accessibility can also be a major contributor to student satisfaction. While accessibility is perhaps most often framed in terms of the sense of being able to come to campus, in the current project our concerns mainly surrounded accessibility of a truly global (transnational) collaborative educational experience. Our challenges were to:

1. make transnational and transdisciplinary collaboration more accessible via Monash-Warwick Alliance co-teaching using the international portal
2. ensure the benefits of communicative richness and presence that a f2f classroom provides were available to all students in the unit, no matter where they were located, fostering the formation of a community of inquiry within the 'trans' or open third space.

The use of simultaneous multiple modes of teaching and learning is key to our educational design. While Keel (2011) points out that multiple modes such as f2f, online, individual, and group work give students flexibility, the benefit of our hybrid model is not so much that students can learn in their own time (one of the most often touted benefits of web-enhanced education) but rather that they can simultaneously experience the benefits of both f2f contact with other

students and their teacher, as well as a highly accessible international exchange with students and partner-teacher on the other side of the world.

The core design of the 'Forms of identity' unit taught via the international portal involves the delivery of 60 minutes of disciplinary-grounded material per session, followed by a further 60 minutes in which all participants develop learning in an interdisciplinary style, including the use of set texts, films, or other media. This approach embodies the Warwick Institute for Advanced Teaching and Learning's OSL pedagogies, balanced by methods including reflection and discussion. Activities and assessment tasks were carefully designed with inter/transnationalization and inter/transdisciplinarity in mind. Students were required to take part in theory-building and avatar-design exercises cross-institutionally via the portal, relate the notions of identity covered to their own discipline areas, and complete reflective journals throughout the semester. The next section describes the spatial and technical design decisions we made in order to support this pedagogical design.

Spatial and technical (physical)

Barrett and Zhang (2009) give three basic principles which can be used to inform the design of educational spaces, namely naturalness, individualization, and appropriate level of stimulation. These three elements will be used to guide the description of the portal classrooms, and will be followed by a technical overview of the space.

Naturalness

As Barrett and Zhang (2009) point out, people have basic needs for light and air, which create strong responses, and can affect how we function in different spaces. Daylight or full-spectrum light is thought best to support visual comfort and performance (Rittner-Heir, 2002). At Warwick, the Portal classroom has windows that allow natural sunlight, or diffuse it as necessary, given that the way in which light hits specific elements of the learning space (desks, whiteboards, screens, and projections) is of importance (Winterbottom and Wilkins, 2009). At Monash, since an internal room was utilized, the lighting array mimics natural light as closely as possible. Sound, too, is important, both in terms of facilitating the hearing of wanted sound (achieved via well-positioned microphones and speakers), and the quieting of unwanted sound (achieved via sound-absorbing panels on the walls). Temperature and air quality are similarly monitored and addressed via air-conditioning, where 20°–23°C is viewed as a comfortable level (Barrett and Zhang, 2009).

Individualization

Despite the general acceptance of these basic needs, as Barrett and Zhang (2009) point out, each brain is uniquely organized, and human bodies come in different shapes and sizes. Choice, for example in terms of the height of table used, flexibility in the way a space can be organized, and the ability to connect within a space are all thought to provide the best opportunities for success. In the present case, furniture was selected on the basis of its flexibility, where students could select from different chairs and work at tables that could either connect together in pairs or groups, or be folded and stacked away. This flexibility was important in order to carry out the activities described in Section 5.1, and gave the ability to create both open and intimate spaces through the positioning of furniture.

Stimulation

Taylor (2005) describes space as a silent curriculum that can complement and enhance engagement, but may also distract from students' ability to focus. A space should be visually rich, involving noticeably different elements, but it should also ensure unity between elements to avoid a sense of disorder (Barrett and Zhang, 2009). In the portal's design, a colour palette of green and grey was selected. As Barrett and Zhang (2009) state, colour has been shown to affect psychological reactions and well-being, carrying visual, associative, and symbolic effects. Red, for example, arguably may have a negative effect on performance in both educational and professional contexts (see Elliot *et al.*, 2007; DIEHL, 2001; Rittner-Heir, 2002). Conversely, as Mehta and Zhu (2009) report, some existing research has suggested that blue–green colours may lead to better performance, particularly in creative, approach-oriented tasks, supporting Kwallek and Lewis's (1990) discovery that individuals proofreading in red offices made fewer errors than those in green offices, but also reported higher levels of distraction. Thus, green may be considered an appropriate colour to stimulate creative thought (Mehta and Zhu, 2009), and to encourage connection, construction, and relation – three necessary steps for collaboration in virtual environments (Arunasalam, 2011). Further complexity/unity was introduced through texture, where both hard surfaces (desks, painted walls, whiteboards, glass) and soft furnishings (padded chairs, sound minimizing panels, carpet) were utilized to help to animate indoor experiences (Barrett and Zhang, 2009). Care was taken to ensure that the physical environments at Monash and Warwick mirrored each other as closely as possible – from the colour of paint on the walls, to the design of the carpet, to the fabric on the furniture – in order to ensure as seamless as possible a visual transition from the real physical environment to the virtual projected environment. Care was also taken in terms of acoustic integration. Sound absorbing panels were added to the walls to improve sound quality, and the portals have a number of microphones in order to provide good sound quality from all students in the room, without the need for fixed seating, additional microphones, or teacher-led turn-taking. As Anderson *et al.* (2003), Stacey (1999), and Koh and Hill (2009) point out, while technology can provide geographically and temporally distanced students with an environment for knowledge-construction and virtual collaboration, low-quality audio and video makes interaction difficult and is seen as a major challenge in videoconferencing for education.

The key component of the international portal teaching space is of course the portal itself, a large, full-HD projected screen with a camera installed at the front of each room that allows participants at both ends to see each other at eye level and at close to life-size. McBrien *et al.* (2009) draw upon transactional distance theory (Moore and Kearsley, 1996) to highlight the importance of physical in addition to verbal communication, giving the example of gestures. In addition, there are secondary projectors and whiteboards, which can be projected to the other institution, for collaborative group work activities using smartboard technology. The importance of pen-based presentation has been well established; Anderson *et al.* (2003), Ellis-Behnke *et al.* (2003), Enriquez (2010), Itoh (2006), and Rogers and Cox (2008) show that while a lack of such facilities make extemporaneous teaching challenging in distance-learning environments and videoconferencing, the introduction of natural handwriting on slides increases flexibility and is viewed positively by both students and teachers.

Perhaps the most visually impactful element of the room is the flooring, consisting of a large circle of carpet within a border of carpet of a different colour. This provides a useful marker for the positioning of participants in a semicircle facing the portal wall, allowing for optimal visual contact and a greater sense of unity. Additionally, the arrangement displaced the 'sage on the stage' teacher-at-front model, contributing to the sense of uncrowning the teacher's power (see

Monk, 2011b). In the portal, there is no front or back of the classroom. This, and other aspects of the room, will be the subject of further research.

Future directions

As Garrison and Vaughan (2008) note, the development of a supportive learning community takes time and effort. The model we have created in this teaching mode will be used to add another unit in 2014/15 and provide a platform for ongoing virtual teaching collaborations. In its next offering, we will also expand the unit's enrolment capacity to increase the number of students able to take part in this transdisciplinary experience. Discovering a way for OSL to engage larger numbers of students is a major challenge. Furthermore, while current discussions and assessment tasks allow students to combine what are often disparate disciplines in creative ways, one mode of enhancing the transdisciplinary nature of the unit that we intend to trial in the coming academic year is the introduction, at students' request, of a panel at the end of the unit at which a number of academic guests will be invited to return by the students for a final summary discussion.

Another important consideration is the adaptability and scalability of the model for future expansion, in terms of the usefulness of this model in particular socio-economic contexts. The initial outlay for the required technology for many institutions of the developed world could be considered relatively minor. However, in other regions the set-up costs and technological access would be prohibitive and would limit the number of locations that could be involved. Students studying independently by distance would in future incarnations of the model have the opportunity to participate, as technology allows us to create individual connections into the portal. Nevertheless, it is still necessary for students to have access to quality internet connections and suitable devices. As HE institutions begin to look at their obligations in an internationalized educational environment then institutions may seek to support the development of these spaces of connectivity across a global educational community.

The portal and the pedagogical model developed here have already served a number of other functions that have contributed to academic mobility and internationalization, in line with Gibney's (2013) focus on undergraduate study, global research, and internationalized education. These uses include a demonstration of Portal Pedagogy across institutions in Warwick's 'Strategy Bites' teaching facility showcase in March 2013, and the use of the portal for the Monash–Warwick International Conference of Undergraduate Research in 2013. Other future possibilities include the use of the facilities for the facilitation of collaboration with students on practicum, as pointed out by Romeo *et al.* (2012), allowing teachers to bring experiences from students on professional placements into the classroom, and, in the postgraduate sphere, allowing cross-institutional supervision. One such example is a new double master's degree in journalism, politics, and international studies offered across Monash and Warwick universities. The two portals will be used as a common space for student conferences and shared research thesis supervisions, and will connect cohorts across country and discipline borders.

A number of areas outlined in this paper deserve further consideration, including more practical experimentation with the design of the spaces in relation to communication, gesture, and gaze; students' use of social media outside of the class; as well as the use of frameworks such as interpretive phenomenological analysis in teaching inter/transdisciplinarity; and academic mobility. As Kim (2009) demonstrates, the transnational academic must be able to move beyond territorial boundaries. Hall and Knox (2009) ask us to stop thinking about distance education and f2f teaching as opposites. This position paper has outlined the initial phase of the innovative Portal Pedagogy where campus-based classes are enhanced via technology, providing an international

experience to those students who may be unable to participate in a traditional exchange. It is the starting point for an ongoing collaboration stretching across other disciplines, institutions, and countries.

Notes

- 1 Globalization is already a buzzword in danger of becoming a cliché (Held et al., 1999; Yang, 2003), illustrated by the fact that the number of articles with 'globalization' or 'global' in the title almost tripled in the decade towards the end of the twentieth century (Busch, 1997). Despite this, as Kellner (1998) and Yang (2003) observe, the word lacks precise definition. According to Yang, attempts to define globalization highlight 'the complex intersection between a multiplicity of forces, embracing economic, technological, cultural and political change' (Giddens 1990; Robertson 1992; Scholte 1993; Axford 1995; Albrow 1996; Rosenau, 1990; Rosenau, 1997, cited in Yang, 2003: 271), which supports our argument for a transdisciplinary approach.
- 2 The Group of Eight (Go8) is a group of leading Australian universities distinguished by research intensity and comprehensive education.
- 3 These statements are from websites of the University of Melbourne, the University of New South Wales, the University of Sydney, and Monash University.
- 4 See for example: www.portaleducation.com/;
[http://portal.det.wa.edu.au/portal/page?_pageid=803,886439&_dad=portal&_schema=PORTAL](http://portal.det.wa.edu.au/portal/page?_pageid=803,886439&_dad=portal&_schema=PORTAL;);
<http://en.wikipedia.org/wiki/Portal%3AEducation>,
<http://education-portal.com/>;
www.abc.net.au/learn/education-portal.htm;
<https://civicaeducation.com.au/products/civica-education-suite/ce-portal>;
<http://rcpa.edu.ac/education>;
www.educationportal.mp.gov.in/;
http://web.education.unimelb.edu.au/music_education_web_portal/;
<https://tedonline.deewr.gov.au/Login.aspx?ReturnUrl=%2fdefault.aspx>

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