Blended spaces, work based learning and constructive alignment: Impacts on student engagement

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This study examined students' active engagement in the context of aligned curriculum and instruction. In conjunction with Biggs' (2003) notion of constructive alignment, the ten principles of engagement suggested by Krause (2005) informed the redesign of an undergraduate course, which was delivered fully online and had a work-based learning component. The results of the present study strongly suggest that the course redesign has lead to significantly increased student engagement and achievement of higher order outcomes. Statistical analyses using Student t-tests revealed highly significant increases ($p=0.002$) in student engagement as measured by the average total 'hits per student' on learning resources, and a highly significant increase ($p=0.001$) in student engagement within the Discussion Forum on the online learning environment. Findings in the study highlighted a number of implications for educational practice, one of which is the need for a University- or systemic-wide review of the constraints that inhibit responsive course redesign.

Keywords**:** work-based learning, constructive alignment, authentic learning, blended learning

Introduction

The study reported in this paper involved an undergraduate course in the Bachelor of Occupational Health and Safety and Bachelor of Human Movement Science. The delivery of this course utilised blended learning environments to facilitate work-based learning and mediate student active engagement. The concept of engagement has been extensively explored in the context of student learning, particularly given that a strong relationship is observed between engagement, persistence and positive learning outcomes (Carini, Kuh & Klein, 2006; Krause, 2005; Pascarella & Terenzini, 2005). Krause (2005) suggests that there are a variety of ways that students engage, which include engaging through class contact and study, engaging on-line, engaging with the institution, engaging with peers, and engaging with academic staff. Krause (2005) also suggests that time spent on particular activities can provide a useful starting point in gaining evidence of student engagement.

All of these strategies were targeted in the redesign of the Industry Practicum course discussed in this paper, upon which the principles of constructive alignment (Biggs, 2003) were explicitly applied in the learning design. Constructive alignment is an approach to learning and teaching in universities, which demands direct alignment of learning activities, assessment and student learning outcomes (Biggs, 2003). The focus of the constructive alignment approach is on learning activities that lead to deep, transformational learning as opposed to surface learning of facts and information (Walsh, 2007). If the delivery of instruction highlights this focus, John Biggs (2003) the originator of constructive alignment, contends that students are likely to be more actively engaged in the learning and teaching process. This assertion was put to the test in the current study, the findings for which illustrate some useful outcomes for improving educational practice in higher education. The purpose of the study was to examine the effects on student engagement of redesigning a work-based learning course using the well-established principles of both constructive alignment and student engagement. The paper also aims to contribute to the literature on student engagement and learning in blended spaces when constructive alignment is achieved.

In the following sections of the paper, the notion of constructive alignment is briefly explored, highlighting its influence when facilitating work-based learning. The vision for engagement that informed the learning design is also discussed which extrapolates the important role of technology in mediating engagement for the student cohort studying off campus and whilst on industry practicum placement. The next section presents the method used in the study, followed by discussions on results and findings. The final part of the paper draws attention to the challenges faced by educators and implications for educational practice.

Constructing learning by aligning teaching: An approach to facilitating engagement

The trajectory of learning and teaching is inextricable; hence it is important to recognise that the foundation of good teaching needs to be defined in terms of the learning activities of the students not the teaching activities of the teacher. Herein lies the specific role of the teacher in the educational enterprise and according to Shuell "the teacher's fundamental task is to get students to engage in learning activities that are likely to result in their achieving those [learning] outcomes" (1986, p. 429). Biggs (2003) suggests that traditional teaching methods such as the lecture, tutorial and private individual study do not provide much support for the development of the skills required for higher-level learning processes. These methods are effective for the academic, highly motivated student, but not for the majority of students. In order to achieve successful outcomes, he argues that students must want to learn (which reflects the attitude of the highly motivated student). He refers to Feather's expectancy-value theory, which postulates that students must see the learning to be important, i.e., it must have value to the learner, thus, Biggs' notion of constructive alignment provides a useful framework for constructing learning by aligning teaching, if students were to achieve desired outcomes such as developing 'functioning knowledge' or professionally relevant understanding (Biggs, 2003; Entwistle & Entwistle, 1997). The constructive alignment approach to university teaching and learning demands the students learn skills for seeking out the required knowledge as the changing situation demands. The approach facilitates active student engagement in authentic learning activities that are designed to achieve desired learning outcomes and assessed in terms of what students can do, rather than the 'declarative knowledge' or knowing about something they can recite or write (Biggs, 2003).

Figure 1 illustrates the underlying principles of constructive alignment, adapted from Biggs (2003). The 'constructive' component suggests that students construct meaning through relevant and authentic learning activities. It implies that it is the responsibility of the teacher to act as the catalyst that facilitates the learning of the student through creating learning activities and assessment that are aligned with the learning outcomes, in such a way that students can construct meaning in a given learning event. That is, it is *what the student does* that is more important in determining what students learn than what the educator does (Biggs, 2003; Shuell, 1986). The 'alignment' component refers to what the educator does. That is, the educator creates a learning environment that includes learning activities and assessment that facilitate the student achieving the desired learning outcomes.

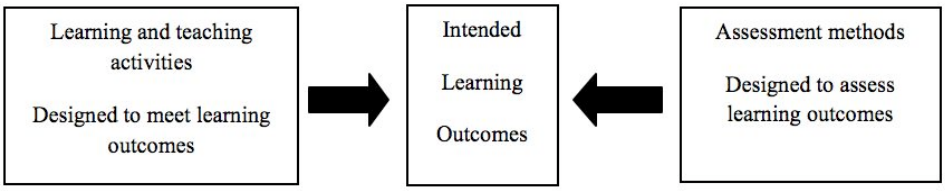

Figure 1: Aligning learning outcomes, activities and assessment

Constructive alignment therefore is a teaching system aimed at supporting learning, where the emphasis is on process rather than content. Biggs (2003) contends that the university focus on theoretical, declarative knowledge (which is often seen as irrelevant by students) frequently results in a surface approach to learning focused on 'passing' the course. Instead, he emphasizes 'functioning knowledge', which extends the declarative knowledge into a specific context and can include integration of several domains of knowledge. This perspective is echoed amongst the proponents of situated learning (e.g. Bransford, Brown & Cocking, 2000; Brown, Collins & Duguid, 1989; Lave & Wenger, 1991) and support the position that in order to develop functioning knowledge, the role of context must be recognised. The goal is to establish "meaningful linkages with learner experience and in promoting connections among knowledge, skills, and experience" (Choi & Hannafin, (1995, p.54). It is the context and activities that bring about knowledge development within individual students.

The influence of constructive alignment in facilitating work-based learning

Based on the constructive alignment framework's emphasis on active student involvement in facilitated learning activities, Walsh (2007) suggests that work-based learning is more likely to achieve better learning outcomes for a number of reasons. Firstly, work-based learning is an example of experiential learning and therefore requires active engagement in the learning process (Kearsley & Shneiderman, 1999). Students will place higher value on successful learning when in the real world work context. Secondly, students focus on competency in real work-related tasks rather than the decontextualised approach of a university context. Thirdly, taken together, the two factors above are more likely to generate a higher level of motivation in students when placed in a workplace setting. Finally, work-based learning by nature demands higher order thinking such as predicting, diagnosing, explaining and problem solving (Kearsley & Shneiderman, 1999). Such cognitive behaviours lead to deeper learning than regurgitating subject content. Indeed, Billet asserts that there is "long-standing evidence of the efficacy of learning in the workplace" (2001, p. 19) because knowing and doing simultaneously occur through ongoing and reciprocal processes.

The constructive alignment approach also emphasises the importance of appropriate assessment that assesses the desired learning outcomes (Biggs, 2003). For work-based learning where functioning knowledge rather than declarative knowledge is the emphasis, decontextualised assessments such as examinations or tests are inappropriate and educationally invalid. Biggs (2003) and the Higher Education Academy (2007) both highlight that the constructive alignment model requires performance assessment such as vivas, individual and group projects, individual learning contracts, critical incident analysis, case study presentations, reflective journals or portfolios. Moreover, applying the constructive alignment approach to work-based leaning emphasises the need for reflection to be integrated when designing learning activities, as work-based learning is centred on reflection as the learning activity (Grey, 2001). It is not only a matter of acquiring a set of technical skills or knowledge but it also demands learning from experience upon which reflection is a critical element of the learning process. In work-based learning, the role of the educator is to become more a 'critical friend' to the 'student practitioner', where equal status and expertise is exchanged to create new knowledge (Kearsley & Shneiderman, 1999; Swan, 2001). Again, this demands the lecturer take on more a role of supporting and extending the student's learning through more a focus on the educational process and learning activities than on subject content (Walsh, 2007). From an instructional design point of view, the principles espoused in constructive alignment resonate well with the curriculum design intentions for work-based learning that, when combined, educators will have significantly increased capacity to facilitate active learning and engagement.

The role of blended learning environments in facilitating engagement

In an extensive review of the literature on student engagement to enhance student learning, Krause (2005) proposes ten principles to enhance student engagement within a university setting:

1. Create and maintain a stimulating intellectual environment
2. Value academic work and high standards
3. Monitor and respond to demographic subgroup differences and their impact on learning and teaching
4. Ensure expectations are explicit and responsive
5. Foster social connections
6. Acknowledge the challenges
7. Provide targeted self-management strategies
8. Use assessment to shape the student experience and encourage engagement
9. Manage online learning experiences with care
10. Recognise the complex nature of engagement in your policy and practice

Together with Biggs' (2003) constructive alignment model, the above principles guided the course redesign of OCHS13007 Industry Practicum, the significant feature of which is the integration of technology to learning and teaching. According to Barone (2003), we are in an era of technological explosion where the conceptualisation of the "learning environment is transitioning from learning in a physical space—that is, the classroom—to a student-centered learning environment situated in cyberspace" (p. 42). Web-based technologies for instance have been attributed to add new dimensions of richness and complexity to the learning experience (see Barone, 2003; Frand, 2000; Graham, 2004). Indeed, Frand (2000) contends that the technological explosion has changed the way people think and operate. Muldoon cites Candy (2004) in suggesting that, "the web has the capacity to offer certain forms of self-directed learning and provide greater social contact for learners than the former stand-alone systems, and electronic devices that preceded them" (2008, p. 278). As Biggs suggests educational technology "has established a place in the normal delivery system of most universities whether on or off campus" (2003, p. xi).

The student cohort in the current study requires varying degrees of self-direction as they study off-campus and attend practicum placement. The University's learning management system (Blackboard®) can provide an effective web-based learning environment to support self-directed learning and facilitate a blended approach to the delivery of this course. Because Blackboard® is web-based, it can host critical learning resources for the students to access on demand, provide communication tools for interaction and communication, and more importantly, provide a means to seek and offer guidance throughout the learning journey (Graham, 2004). This is based on the assumption that to facilitate student engagement and interaction in an online environment, the educator must facilitate social presence (Ubon & Kimble, 2004). Students must feel they belong to a learning community that enables students to interact comfortably with each other, the educator, and the content. Ubon and Kimble (2004), highlight that the degree of social presence moulds the quality and quantity of engagement and interaction online. Table 1 illustrates the current investigators' vision of engagement for work-based learning, underpinned by the principles suggested by Krause (2005), the implementation approaches for which rely heavily on the use of technology to mediate engagement in blended learning environments. This approach recognizes that without the aid of educational technology traditional methods are unable to address the need for higher-order learning experiences and outcomes demanded by a changing knowledge and communication-based society (Garrison & Vaughan, 2008).

Table 1: The vision of engagement for work-based learning in blended learning environments

Principles	Lecturer engagement	Student engagement
Create and maintain a stimulating intellectual environment	The lecturer posts points for discussions on the Discussion Board, all of which facilitate students' completion of Portfolio assessment.	Students respond to discussions, or generate new topics on the Discussion Board, which lead to preparing work-related documents for Portfolio submission.
Value academic work and high standards	Lecturer uses assessment rubrics, which convey academic standards and quality expectations. Feedback on draft work-related documents is provided via email or course website, if sought.	Students prepare work-related documents in accordance with current industry standards and practice, which form part of Portfolio assessment.
Monitor and respond to demographic subgroup and their impact on learning and teaching	The lecturer provides a variety of learning resources online, support mechanisms, and different means of communication to cater for different needs and support requirements.	Students operate and interact in a supportive web-based learning environment, as a means to 'connect' with their peers and lecturer before, during and after practicum work placement.
Ensure expectations are explicit and responsive	The lecturer explicitly states the intended learning outcomes, the guidelines for meeting them are detailed and frequently reiterated in the learning activities and assessment tasks.	Students enact the verbs contained in the learning outcomes, in accordance with set learning activities and assessment tasks in the online space and the practicum workplace.
Foster social connections	The lecturer maintains online presence, models professional behaviour, and actively engages on the learning environment to motivate students, moderate discussions and provide guidance.	Students collaborate online to discuss topical issues leading up to their work placement, as well as during and after work placement.
Acknowledge the challenges	The lecturer, in operationalising the University approved course structure, affords the students opportunity to make their choice of work placement; completion is also negotiable and flexible to enable the students to fit work-based learning with other coursework and life commitments.	Students submit their preferences by email at nominated timelines to ensure that common understanding is met and agreed upon about the work placement.
Provide targeted self-management strategies	The lecturer provides stepping stones to the end-goal by building scaffolding around the activities, such as facilitating carefully planned learning events that allow students to independently monitor their progress and personal development.	Students use Blogs and Discussion Board to monitor progress and personal development, reflect on experiential learning in the workplace and document incidents. These activities link to Portfolios 1 & 2.
Use assessment to shape the student experience and encourage engagement	The lecturer provides authentic learning activities and assessment tasks, the processes for which help students explore and plan career prospects in a meaningful fashion.	Students undertake work placement and use Blogs to reflect on work-based learning experiences to be collated as evidence for evaluating their own performance through Portfolio assessment.

Manage online learning experiences with care	The lecturer provides detailed guidelines and ongoing guidance for the two Portfolio assessments, both directly shape the types of web-based learning activities that students are expected to engage in during their learning journey.	Students use the Discussion Board to collaborate with each other for support, to seek guidelines from lecturer and/or peers in the course of completing assigned learning activities and assessment tasks.
Recognise the complex nature of engagement in your policy and practice	The lecturer facilitates the approval of the 120 hour practicum to be completed both within and outside of normal course delivery timeframes to support different forms of student engagement throughout their experience.	Students choose when they enrol, where they undertake the 120 hour practicum and when, what format, e.g. 1 x 120 hour, 3 x 40 hours, etc.

Research method

Testing the hypothesis of increased engagement resulting from constructive alignment was supported by a case study research method. Ethical approval was granted for the collection of quantitative and qualitative data from students enrolled in the T1, 2008 course. Students ranked their experiences with specific learning elements on a five-point Likert scale and were provided an opportunity to respond to a range of open-ended questions concerning their experience with the course design, assessment items and learning framework. The analysis of qualitative data drew primarily on the grounded-theory tradition of Huberman and Miles (2002). The responses were examined, compared, conceptualised and categorised to identify central and recurrent themes (Strauss & Corbin, 1998).

Course statistics were downloaded from the Blackboard® site for both term 2, 2007 (old course design) and term 1, 2008 (revised course design). This data was used to compare and contrast the level of student engagement within key content areas of 'Course Information', 'Study Materials', 'Discussion Board', 'Assessment' and 'Resources'. The data was cleaned to eliminate sources of bias including staff access and student movements in and out of the course. This ensured the statistics were measuring only the level of continuing student access and were not skewed upwards by the level of staff access and not skewed downwards by the low level of access from students who did not complete the course. This process allowed for accurate and robust comparisons.

Participants

A total of 39 students enrolled in the undergraduate OCHS13007 Industry Practicum course in Term 1, 2008 participated in the study, which comprised 19 males and 20 females aged 20.2±3.2 years.

Implementation

The redesigned course was implemented in Term 1, 2008 as per the University-approved delivery structure for OCHS13007, which integrates 120 hours work-based learning, complemented by web-based facilitated instruction for students studying off campus. Table 2 provides a snapshot of the learning tasks and assessment used in the study. This table illustrates that students have no choice but to engage in these authentic learning tasks as they are linked to their industry practicum placement, as well as Portfolio assessment.

Most if not all the learning tasks were linked to assessment (Portfolio 1 = 40%; Portfolio 2 = 60%). Students whilst on work placement worked closely with a nominated 'mentor' located in the same workplace. The online learning environment was created on Blackboard® to provide students access to communication tools and learning resources such as the print Study Guide, guidelines for setting up student personal blogs on a public domain platform of their choice, templates for preparing work-related documents and the Course Profile which contained detailed instructions for learning activities and assessment tasks. The Discussion Board was set up in such a way that scaffolding was provided around the learning activities and assessment tasks, while the Announcement tool in Blackboard® was utilized to provide ongoing guidance throughout the students' learning journey. The university-based teaching staff facilitated content-based discussions on Blackboard® and in accordance with the set learning activities students' participation on the Discussion Forum was voluntary. Moreover, reflective practice is a key element of the learning design explored in this research. The use of blogs provides a platform for completing specific reflective learning activities and Portfolio assessment planned for the course. To enable the lecturers to track the students' blogs regardless of where they were hosted on the Internet, the use of the in-house developed Blog Aggregation Management (BAM) system was critical (see Jones and Luck (2009) for further discussion on BAM).

Table 2: Aligning content, learning tasks and assessment for work-based learning

Content area	Learning tasks	Assessment
Self assessment	Discussion forum "Self assessment" Reflective exercises 'Your career and you' Blog post "Becoming aware of my career options"	Portfolio 1: Preparing for work
Career exploration	Discussion forum "Career exploration" Conduct an informational interview with industry Research careers using www.myfuture.edu.au Blog post "About my chosen workplace"	
Resume writing	Discussion forum "Resume writing" Conduct a skills and experience audit View selected Youtube video clips Prepare or update Resume	
Written communication	Discussion forum "Practicum Proposal" Draft practicum placement cover letter	
Selection criteria	Discussion forum "Selection criteria" View video clip on 'Hiring manager's perspective' Prepare statement addressing Selection Criteria	
Interview techniques	Discussion forum "Interview techniques" View and critique clips on interview techniques Blog post 'Behaviours to avoid during interviews'	
Industry practicum	Blog "Getting ready to start my practicum" Blog "My practicum work environment" Blog "Learning on the job" Blog "Discovering myself as a professional" Blog "Being proactive with career development" Letter of appreciation to industry mentor Written report on practicum experience	Portfolio 2: Life at work and beyond

Blogs are a collection of writings that are easily published and accessed via the Internet. For teaching and learning purposes, they lend themselves to exploratory topics, enhancing writing skills, and creation of student portfolios that keep records of an individual student's progress, achievements and reflections on practice (Weller, Pegler and Mason, 2005). However, the saying *'you can lead the horse to water but you cannot make it drink'* rings true for many educators in that, just because the lecturer gives the students the learning tasks and tools in which to complete them, it does not always mean that students will respond. In such situations, Biggs (2003) suggests that the principles espoused in constructive alignment are designed to address this educational issue, and should aid the facilitation of a more active engagement. To this end, Figure 2 illustrates an example of constructive alignment in practice, which shows a blog activity and assessment task that demonstrates the link to a particular learning outcome.

Data collection and analysis

Comparing and contrasting student interaction and engagement between Term 2, 2007 (old course design) and Term 1, 2008 (revised course design) necessitated collection of both quantitative and qualitative data. Quantitative data was obtained by an analysis of readily available statistical data from Blackboard®. The statistical data was used to compare and contrast the level of student engagement within key content areas of the course site, i.e. 'Course Information', 'Study Materials', 'Discussion Board Forums', 'Assessment' and 'Resources'. These areas were determined to be the best indication of students' engagement. Sources of error including staff access and student movements in and out of the course were eliminated from the Blackboard® data. After removing staff and students who dropped the course, the total number of students in Term 2, 2007 was 29 and in Term 1, 2008 was 39. A series of unpaired, two-tailed Student t-tests were undertaken to determine statistical differences between the total and mean number of unique 'hits per student' in each of the content areas and the total and mean number of hits per student overall. Statistical significance was accepted at an alpha level of 0.05.

A survey questionnaire containing both quantitative and qualitative questions was also administered via the Term 1, 2008 Blackboard® course site. Analysis of the qualitative survey provided a rich source of data concerning the students' experience of the redesigned course. The quantitative data from the questionnaire was generated within Blackboard® in tabulated form and analysed for validation and triangulation purposes with other data sources. The overall response rate was 49% with 19 of the 39 students enrolled in the course responding to the online survey.

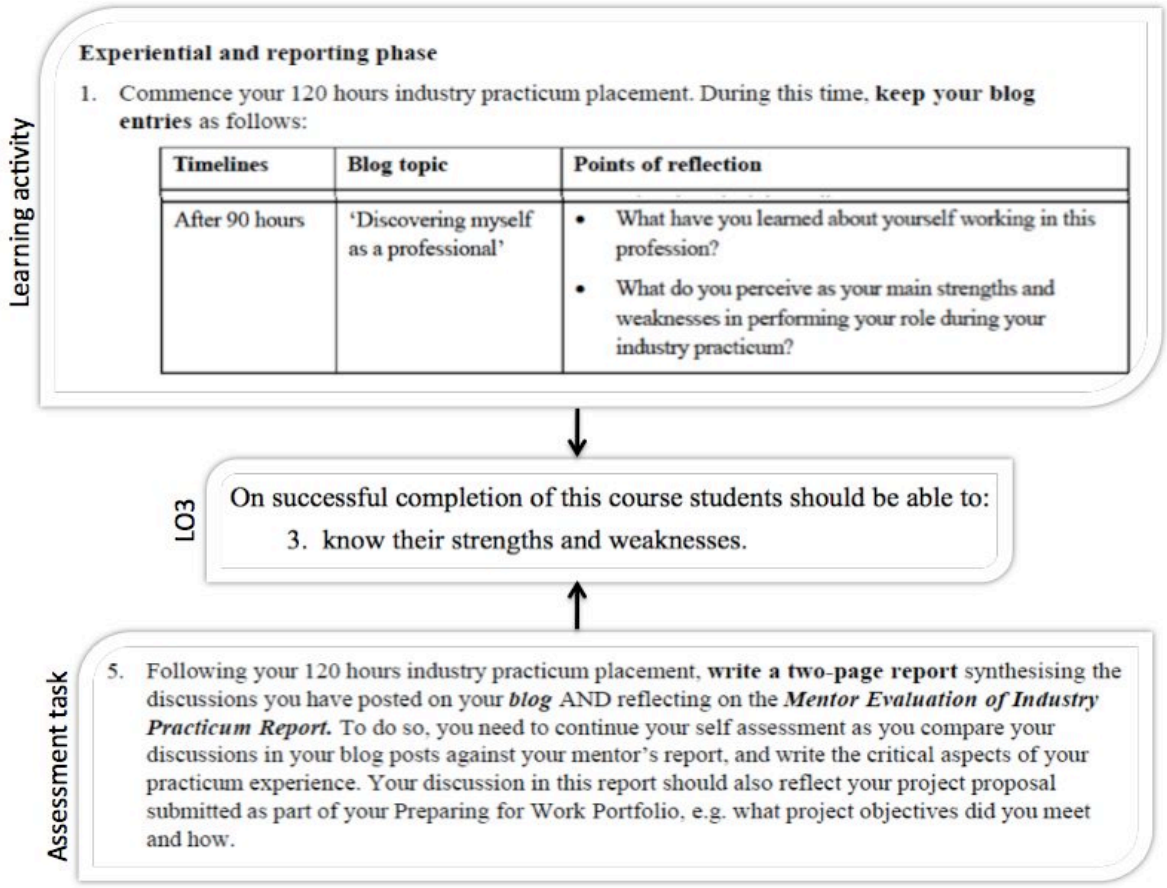

Figure 2: An example of constructive alignment in practice

Results, findings and discussions

For many years educational theorists have identified the importance of students actively constructing meaning grounded on their own experience (Krause, 2005; Newmann, Marks & Gamoran, 1996). In order to support this construction of meaning, students need to interact with one another in achieving authentic activities in social contexts in which these activities will actually be used (Jonassen et.al., 1995). Data triangulation was achieved by evaluating Blackboard® access statistics, student's responses to the questionnaire and the quality of their online interactions with each other. Recall that our vision for engagement included students participating in discussions, supporting each other and seeking guidance as required, among other things that give students a sense of community belonging. The comments below confirmed that the online environment fostered social connection and created a stimulating intellectual environment as Krause (2005) had recommended. The environment also appeared to have influenced students' social presence, supporting the theory that interaction is considered vital for a successful learning experience (McIsaac & Gunawardena, 1996).

> ... offered plenty of discussion boards for each topic...most important thing … They help me with questions or queries I may have.
>
> …it is good to be able to communicate with other students.
>
> The discussion board helped me understand parts of the course from another persons view
>
> …having individual sections was excellent and overall I think blackboard is a great learning tool and is a great way for externals to feel connected.

Both lecturers and students successfully enacted the vision of engagement described in Table 1 on all counts, the evidence for which is shown in Table 3 below. The results suggest that the redesign of the OCHS 13007 course has significantly increased student interaction and engagement not only with assigned learning tasks but also incidental learning through spontaneous interaction with both the course material, as well as student-student and student-staff interactions. Table 3 below shows the total number

of hits, hits per enrolled student, and the percentage increase in student interaction with key areas of Blackboard® between term 2, 2007 and term 1, 2008. The statistical analysis demonstrated a highly significant increase ($p=0.002$) 136% in student access and engagement (hits per student) with total Blackboard® course content. Importantly, the combined student-student and student-staff increase in interaction in the Discussion Board forum 'hits per student' of 217% between the two terms increased significantly ($p=0.001$). These findings strongly support the qualitative statements made above regrading feelings of increased connectivity and ability to communicate with other students.

Table 3: Blackboard® hits on key content areas for Term 2, 2007 and Term 1, 2008

	Term 2, 2007 Total Hits (n=29)	Term 2, 2007 Hits / Student	Term 1, 2008 Total Hits (n=39)	Term 1, 2008 Hits / Student	Percentage Change
Course Information	174	6	256	7	17
Study materials	655	23	1856	48 *	109
Discussion board	2772	96	11870	304 *	217
Assessment	154	5	370	9	80
Resources	1269	44	1411	36	-18
Total	**4961**	**171**	**15707**	**403 ***	**136**

* significant difference between Term 1, 2007 and term 2, 2008, $p<0.05$

For the purpose of this study only quantitative data on student access to the Blackboard® site was analysed. However, the learning design, which required frequent activity from students, also compelled teaching staff to interact regularly with the Blackboard creating an enriched and self-perpetuating communal learning experience.

Results from the online survey demonstrated that 70% of the Term 1, 2008 students considered the assessment items appropriate to meet the learning outcomes. The comments below not only highlight that the assessment met the learning outcomes but that they were authentic and pedagogically divergent learning tasks.

> The course outcomes make sure that you complete all modules and be proactive throughout the semester.
>
> Assessment items and course profile objectives match up well.
>
> … they all built one upon another, guiding us to the point where we could successfully complete Portfolio one, and will assist in completing Portfolio two
>
> All the assessment is real world stuff, this helps a lot because we can actually use these assessment pieces as documents to further our chance of obtaining a job.

Moreover, in experiential learning such as those that occurred during the work placement in the current study, students learned by action and then by a process of critical reflection and evaluation of the experience. This is evident in the comments below, which also support the position that assessment can be used to shape the student experience and encourage engagement that can lead to higher level learning (Krause, 2005).

> … portfolios are good because they explain what we did during our industry prac and how we overcame any obstacles etc. and also what we learnt.
>
> The first assessment gave me confidence and allowed me to improve my written work to demonstrate the professional attitude that I would like to be recognized for not only during the industry practicum but also as an OHS professional in industry.
>
> Portfolio 1 assessment items were significantly comprehensive. It catered for a broad spectrum of individuals from the school leaver to the mature and been there done that individual. It also reminded the latter of some job seeking skills they may have omitted.

The design of both learning activities and assessment tasks was aimed to facilitate meaningful student engagement. One of the learning events pertained to 'Career Assessment', which rated highest as the most important or useful in the survey. The finding of this study indicates that if the learning design enables students to construct meaning within a particular learning activity by providing a situated context for that activity (in this case, undertaking 120 hours industry practicum), the approach can facilitate active engagement and most importantly it can facilitate reflective practice and conceptual change. The experiences of students during work placement served as an anchor for learning about themselves and their career goals, which resulted in higher level learning being attained. This finding aligns with Biggs' (2003) assertion that meaning is personal, and education is about conceptual change. The following comments from the online survey responses provide some interesting account of the students' perceptions of their learning experience and offer evidence that students achieved deeper understanding.

> … it makes you think, plan and act on your future career.
>
> … has improved my understanding of the many industries and jobs available. …has expanded my knowledge, identified my strengths and found weaknesses I need further developing on, so it has a positive experience.
>
> When people asked me what I wanted to be after university, I used to look at them with a blank face. Now after finishing my self assessment I have a better understanding of who I am, what I want out of life, and the type of job I want.
>
> Through this course I am certainly becoming more aware of my career options, this really came along at the right time for me.

The finding also suggests some learning design weaknesses that need further exploration and modification, which pertained to the degree of authenticity used in the design of some learning activities. While the setting was authentic, some students perceived a number of tasks as somewhat contrived and not necessarily useful. These factors may have impacted on the level of engagement in some topic areas. For example, 'Career Management' (Codes of Conduct, Ethics, Workplace legislation such as Anti-Discrimination Act) was ranked from 1-3 (top-half) of the scaling by only 36% of students. 'Self Assessment' and 'Selection Criteria' was both top-half ranked by 60% of students. The following comments from the online survey student responses highlight why these content areas may have been ranked lowest.

> … because I am a mature aged student and have had plenty of practice …
>
> … because I didn't find it useful.

These statements would suggest the need to recognise the prior learning of mature-aged students within the course. Biggs explains that to initiate learning "students need to see the cost-benefits: that engaging in learning has evident value, and that engagement is likely to realize that value" (2003, p. 72). This sentiment duly reflects the feedback from students about their experience of the course, as follows.

> … it helped guide me with my chosen career path.
>
> I have learnt so much from this experience!
>
> …. practicum has been one big positive experience.
>
> My industry practicum experience has been extremely rewarding.
>
> … found a great improvement in my abilities, confidence and my enjoyment in the industry of sport and recreation.
>
> Industry Practicum is the perfect course for me to try and figure out where I am heading in my professional life.
>
> … it has confirmed my interest in this type of work, and that my career in this field will be challenging and rewarding.
>
> Overall this industry practicum has obviously helped my knowledge and skills relating to the work environment, but also my planning and organization skills.

However, one student reported difficulty with the online environment:

> I had several problems as I used Vista. Also depends on internet speed.

Such a comment highlights the need to ensure online learning is designed for the systems that students will be using to ensure minimisation of time wastage for mature-aged students who are balancing competing priorities of work and family life together with their studies.

Conclusions, reflection, and implications for educational practice

The results of the present study strongly suggest that the redesign of the course OCHS13007 Industry Practicum along constructive alignment (Biggs, 2003) and engagement principles (Krause, 2005) lead to significantly increased student interaction, engagement with learning and assessment tasks, and achievement of higher order outcomes. Reflecting on these results enabled the current researchers to identify not only the strength of the learning design but also some weaknesses that warrant iterations for subsequent implementations. The redesign process and revised learning tasks compelled all stakeholders to interact. Indeed, reflection in action on the part of the lecturers and curriculum designer in this research journey has been critical in constructing alignment across all curriculum elements. This reflection resulted in a number of themes emerging about challenges for the lecturers that have significant implications for enhancing future educational practice. These factors include:

Enacting the vision of engagement in learning design highlights a number of critical factors for the teaching staff to consider in their own practice:

1. *Become more comfortable with technology*: Lecturers need to become more comfortable with technology and learn how to incorporate technology into their teaching (Frand, 2000). Most University Lecturers in Australia are 'baby boomers' and commenced schooling when computers were not part of the standard teaching environment. Delivering courses online and facilitating online learning enable teachers to experience the younger students' world is a good starting point to understand their culture of connectivity and interactivity.
2. *Rethink teaching-learning methods*: A second implication is to begin to rethink current teaching-learning methods. As educators there is a need to shift to a learner-centric model (Candy, 2004; Barone, 2003). This model will allow students to be full, active participants in the learning process. As lecturers, there is a need to shift from the broadcast model (lecturing and focusing on facts) to a model that promotes knowledge construction and discovery and establishes communities of practices (Brown, 2000) to accommodate student differences.
3. *Seek a balance to meet needs of students from different generations*: Lecturers must seek a balance to meet the challenges of both the *net-generation* and the equally growing number of non-traditional students who are returning to study. Lecturers need to engage the student in a highly interactive and connected learning environment. Lecturers need to foster collaborative learning and learn how to be the coach or guide rather than a sole disseminator of knowledge. As Frand argues, the "outlook of those we teach has changed, and thus the way in which we teach must change" (2000, p. 5). Subtle changes are not what are needed. Large transformational changes are required.

The ever-evolving information communication technologies will continue to challenge both students but more so educators who need to create new learning environments that will prepare students for collaborative learning in a global, authentic learning environment. The challenge for any university and its educators is to recognise this and for the system, policies and procedures to support the academic staff to embrace emerging models of teaching and learning, such as those espoused in constructive alignment. The Higher Education Academy (HEA) within the United Kingdom (2007) has indeed suggested that achieving constructive alignment is extremely difficult for a number of reasons. First, many academics are not reflective practitioners who constantly modify course design and delivery to attain constructive alignment. Secondly, the HEA (2007) suggests that constructive alignment cannot be achieved or maintained in an institution that does not allow frequent and easy modification of courses. As a result, a course coordinator is discouraged to responsively modify course design and delivery, thus making constructive alignment difficult to attain. Many institutional and procedural constraints at our University currently inhibit responsiveness. However, it is highly likely that such constraints are widespread across the higher education sector, suggesting the need for a systematic exploration of the matter.

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Please cite as: Reaburn, P., Muldoon, N. & Bookallil, C. (2009). Blended spaces, work based learning and constructive alignment: Impacts on student engagement. In *Same places, different spaces. Proceedings ascilite Auckland 2009*. https://doi.org/10.14742/apubs.2009.2179