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1. Understanding the Quality of the Student Experience in Blended Learning Environments: focussing on student engagement as a learner need

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Abstract.

Qualitative focus groups are used to explore two case studies to understand student engagement within contrasting blended learning environments. One of these, a more technology-dependent case, used system logs alongside focus groups as convergent parallel mixed methods. This paper evaluates the use of the blended learning techniques and whether these techniques contribute to positive student engagement, a student's psychological investment in their learning (Dietz-Uhler & Hurn, 2013) and explores the notion of student engagement as a learner need in achieving success.

Gibson (2013) suggests that due to the differences between students' multiple learning environments, more diverse pedagogical approaches need to be considered. These new methods and technologies need to ensure a positive student engagement is facilitated within the blended learning context as much as it is with traditional delivery.

Keywords: blended learning design; student engagement; learning environment; learning technology; focus group; convergent parallel mixed methods.

1.1 Introduction

The purpose of the blended learning engagement project was to understand which blended learning techniques generate positive student engagement, using two contrasting modules as case studies. One involved the delivery of a module taught on a second cycle Master's degree; the other was designed for students on a first cycle Bachelor's degree. In both cases this was the first delivery of the materials in this format and this research forms part of the continuing development of the modules and will inform the development of other modules.

The University of Cumbria and its legacy institutions have been addressing distance learning issues for some time (Greenwood & Inman, 2006). This paper aims to develop understanding of these issues with regard to student engagement in order to improve the student learning experience and in doing so works towards these objectives:

- To understand which of the blended learning techniques used derived positive student engagement.
- To explore other possible techniques that may be appropriate for the case studies.

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- To identify which blended learning techniques may be transferable in the development of other modules.

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	Case Study 1	Case Study 2
Academic level	Masters	Bachelors (first year)
Blend of learning environments	Face to face: classroom. Asynchronous on-line materials.	Face to face: classroom. Asynchronous on-line materials. Facilitated: experiential / outdoor. Work based. Peer based.
Students.	Mature. Working full-time. Middle / senior management.	'Mature' (20-30 yrs) Work or volunteer in 3 rd sector. Aspiring managers.
Research method.	Quantitative analysis of on-line materials usage. Qualitative focus group.	Qualitative focus group.

Table 1 The two case studies

1.1.1 Classroom, On-line and Blended Learning

Boling et al (2012) and Gibson (2013) suggest that because of a significant difference in available non-verbal communication, new blended pedagogical approaches must be developed to facilitate learning in an on-line environment. Bricknell & Muldoon (2013) found that provision tended to focus on technical knowledge rather than developing critical thinking skills and knowledge application. Solutions therefore need to move beyond traditional online learning to a blended learning approach in which the most engaging aspects of face to face learning activities combined with learning activities providing a greater whole experience for the student. (Lopez-Perez, Perez-Lopez, & Rodriguez-Ariza, 2011)

1.1.2 Student Engagement

Engagement, associated with higher level learning and deeper understanding, involves psychological investment in learning, active involvement and interaction, and taking personal responsibility for learning (Dietz-Uhler & Hurn, 2013; Li, Qi, Wang, & Wang, 2014). These are potentially enhanced in blends with less face-to-face time, either as a response to the lack of direct personal contact or as a result of online learner's predisposition to work independently.

Lopez-Perez et al (2011) found that in blended learning, students' independence and self-awareness developed in asynchronous on-line learning combines with the social construction potential of face to face engagement to produce a deeper engagement with learning and better outcomes for students.

1.1.3 Design

El-Khalili & El-Ghalayini (2014) conducted empirical research which considers their Bloom-Redeker-Guerra Mapping Model (B-R-G) and analyse the effectiveness of different on-line technologies in delivering module learning outcomes. This model uses Bloom's taxonomy as a measure of content design,

Redeker's taxonomy to review the type of activity, and the Guerra Scale to map the type of blended learning technology used to ensure full cohesion in the design of the module.

1.1.4 Other Factors that Contribute to Engagement with Blended Learning

Simonds & Brock (2014) found that age and experience with on-line technology provided a significantly different perspective on learning. Which led to different interpretations of interactive behaviour suggests students' expectations of education and their ability to control their learning and the space in which it takes place is of paramount importance (Holley & Oliver, 2010). This 'space' could be either their on-line world or the physical environment and students' ability to control both is crucial.

1.2 Research methodology

This research takes a pragmatic philosophy, using a convergent parallel mixed methods approach to the research question. For Case Study 1, quantitative data on Virtual Learning Environment (VLE) use is collected from system logs and the analysis of the module design using the Bloom-Redeker-Guerra Mapping Model (El-Khalili & El-Ghalayini, 2014). For both case studies, qualitative data is gathered using focus groups (Wilson, 2003) conducted with students. These methods have been chosen in order to develop a comprehensive understanding of student engagement in the context of these case studies (Creswell, 2014).

In both case studies' focus group participants self-selected from the cohorts in response to a request issued face-to-face to the entire group. The choice of an authentic location (Lezaun, 2007) for the focus groups was not straightforward due to the blended nature of delivery but it was decided to use a classroom setting so that the participants would be mindful of their identity as students. Both groups were facilitated by one of the authors (SR) and observed by a familiar colleague who had taught and observed in other activities across the programmes.

The focus groups were facilitated in an open conversational way designed to allow the student voice to be heard, with guidance only required if the 'conversation' meandered off-track (Lezaun, 2007). This style of focus group enabled a deeper understanding of the students' views and perceptions of their engagement with the blend of learning environments and activities.

1.3 Findings concerning Case Study 1

Findings are presented concerning the techniques used, the VLE usage data, and the focus group.

1.3.1 The Technology Used

Table 2 shows the technology used in Case Study 1 which shows a good spread across the whole 'good, better, best' range of the Guerra Scale.

Guerra Scale			Technology Used
Good	1	Static text, activity limited to scrolling through document.	Written Document
	2	Use of hyperlinks which allow users to jump to relevant places.	Web Links
	3	Incorporates dynamic feedback.	Quiz with Feedback
Better	4	Introduces simple movement to text or images.	("Motion" – not used in the module)
	5	Add audio or video or more complex moving graphics.	Voice Over Power-Point
	6	Allows user input, e-activities.	On-line submission of work
	7	Databases or electronic libraries, on-line community forums or discussion groups.	Discussion Forums
Best	8	Use real world processes in realistic e-scenarios.	Simulation - practise examples with model answers.
	9	Includes real time advice or instruction from expert.	("Simulation with coaching" – not used)
	10	Full immersive on-line environment where user has near total control.	("Virtual Reality" – not used)

Table 2 The Technology Used Aligned to the Guerra Scale

B-R-G Model analysis shows that in most cases the content, activity and technology are aligned, with some noticeable exceptions. The 'Welcome' area includes a collaborative discussion forum which is too high on the Guerra Scale for its knowledge transfer objectives. The other exception is the lack of interactive activity within the content areas with higher critical thinking requirements.

1.3.2 Analysing the VLE usage data for Case Study 1

The VLE system log analysis showed that 93% of usage is directed towards the learning and teaching activities, the remaining 7% being administrative or informational in nature. Analysing the data more closely shows that 58% of usage was directed towards the assessment. The learning and teaching delivery resources make up a further 35% of activity in the VLE site. Of the four discussion forums available to students, only one was accessed, this related to the assessment. The remaining forums (one introductory and two formative assessment forums) showed zero usage.

1.3.3 Case Study 1 Focus Group

Participants' unprompted recall of a range of technology was strong. They appreciated the introductory voice over power-point, "it made me feel like I knew [the lecturer] before we'd even met" and "the voice over introduction was helpful with my confidence". Participants suggested that adding a voice-over to more of the power-point lecture slides would have been useful. They appreciated the asynchronous nature of some of the technology, as "the ability to go over [them] again was useful." Participants valued the ability to receive feedback, and cited the quiz which provided instant feedback. This supports Boling et al's (2012) notion that students need to feel a connection with the lecturer.

The Assessment Q&A Discussion Forum enabled students to support each other and provided a space to ask questions, "it felt like the whole group was supporting each other." and was "really nice when other

students responded". Even those who didn't participate in the discussion would go on and read what others had said and also felt comforted that there was a facility they could turn to should they need it.

The participants described the Assessment Q&A Discussion Forum as "need to use" and didn't recall using the other Discussion Forums as they felt that "if it wasn't going to be marked, it was a waste of time".

Some of the participants interacted with each other outside of the VLE and would be in contact and study together. They either already knew each other or had bonded in the face to face sessions on earlier modules. The participants found this "support group" very useful, to the extent that they "wonder about [those] who didn't have that" or indeed how it might be recreated for other cohorts. This supports (Lopez-Perez et al's (2011) notion that blended learning is a more positive student experience than distance learning as it more easily enables the sense of collaboration and community that student need.

1.4 Findings concerning Case Study 2

Findings are presented concerning the blended learning design intentions of the lecturers and the focus group.

1.4.1 The Blended Learning Techniques Used

In contrast to Case Study 1, the VLE is a much smaller part of the blend of learning activities in Case Study 2. It was decided not to analyse the usage data of the VLE in this programme due to the results of the focus group, which emphasised the use of other technology which could not be analysed in this way. Instead an analysis of the types of blended learning utilised on the programme is provided (see Table 3)

Table 3 Blended Learning Environments for Case Study 2

Learning Environment	Count of (facilitated by)
Face to face: classroom	8 days (<i>University of Cumbria</i>)
Asynchronous on-line materials.	VLE (<i>University of Cumbria</i>)
Facilitated: experiential / outdoor	3x residential's covering 11 days (<i>The Brathay Trust</i>)
Work based	On-going work in 3 rd sector (<i>Host organisations</i>) 1 placement day in another organisation.
Peer based	4 x action learning sets. 2 x external organisation visits (<i>Common Purpose</i>)

1.4.2 Focus Group Case Study 2

The participants' recall of technology used was strong, however they described the VLE as providing a "central point" function and didn't differentiate between the VLE materials and access to the on-line research materials available through the library and other student support services which they "always associate with [the VLE]". The use of other non-University technology, such as social networking sites provided students with peer support and a sense of community belonging "because we're all spread out".

This was outside of the Design Team's original view of the programme and beyond the scope of its design, but was raised extensively throughout the focus group.

Student engagement among this group has developed through a very strong peer relationship and supportive peer environment. These students feel able to speak freely within this group and some consider the programme to provide them with a break from their everyday lives where they are able to "be who they are". It was suggested that the residential elements of the programme allow this deeper bond within the peer group and that the level of honesty and reflection required of the programme has helped to encourage this collective identity.

The relationship between the students and the lecturers was also discussed with some students expressing the view that the relationship was crucial to their engagement, while others felt that they had the motivation or discipline to engage independently of the lecturer. Students felt that the lecturers' styles did influence their motivation for engagement however their own mood and personal circumstances also contributed to their levels on engagement.

The variety of environments was considered. In terms of the on-line environment, different situations resulted in different responses. For example students reported inhibited-engagement if they felt exposed when writing on the shared blog, "I didn't feel comfortable with an open blog" ... "Yeah, having it open made me write differently". However having the open environment did provide an opportunity for learning for those lacking confidence. Open environments allowed self-confessed 'lurkers' to "get a feel for how everyone else was doing".

Choosing to work on university premises provided an appropriate working environment for some activities and the rural location provided an ideal situation for more reflective activities: "the reflective stuff is almost like a retreat", "I get my zen back".

Interestingly the conversation repeatedly returned to social media as the glue that holds them all together. Overall, they mentioned numerous sources of "sparks" that continuously reignited their engagement. These all emerged from interaction, whether face-to-face, through social media or prompted by staff.

1.5 Conclusions

This paper therefore brings together three strands: it compares and evaluates the use of different technological elements of the two programmes; it pursues a qualitative understanding of the engagement of the students with each other, with the diverse learning facilitators and with the learning materials; and it concludes by reviewing the design of the blended learning delivery across the contrasting settings.

Objective 1 sought to understand which blended learning techniques derived positive student engagement. This research has found that the technique alone does not enable the engagement but the context in which it is used is more significant. For more technology based delivery the BRG Mapping Model provides a useful tool to ensure the context is aligned, further thought needs to be given to matching higher order learning outcome requirements with high level interactive learning activities. This leads into objective 2 which sought to identify other techniques to use, whether the blend involves an on-line world, a physical world or a blend of the two, the levels of interaction is highly relevant to the levels of engagement by the students.

Objective 3 sought to understand transferrable techniques which could be applied to other modules. This research has found that the key lies within the design of the activities that are relevant to the learning outcomes. The design needs to ensure that opportunities exist to develop the lecturer / student

relationship, the student / student relationship and the environment within this can happen. Lecturers could consider voice recording, feedback to students and opportunities to interact. Effective design allows students to engage with each other whether this is through the formal structure of the programme or through social media. The environment should, where possible, be within the students control but also varied to meet the needs of the student's abilities to meet the desired learning outcomes.

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