

# **Increasing student engagement with virtual learning environments**

Bryan Tobin

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Supervisor: Dr Jonathan Murphy

Programme Leader: Dr Jonathan Murphy

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Department of Psychology

Dublin Business School

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## Abstract

Student engagement has been shown to be positively correlated with measures of student outcomes (e.g. Pascarella, Seifert and Blaich, 2010) and with gains in general education, practical competence and social growth (e.g. Kuh, 2001). Virtual learning environments (VLEs) have been widely deployed in the support of blended learning, as a result engagement with the VLE is now a major part of the student's overall engagement with the college. Increasing student engagement with VLEs is important in light of the positive outcomes shown in studies (e.g. Kuh, 2001; Pascarella, Seifert and Blaich, 2010), to support the national strategy for further education, increase the flexibility with which students can learn and promote inclusiveness. Although the VLE supports a number of tools to facilitate communication, collaboration and enhanced learning (Risquez et al, 2013, p.102) found the main use of the platform in Ireland was for content distribution and assignment submission. Students and lecturers engage less with the more interactive features of the platforms. To investigate how student engagement with VLEs can be improved a thematic analysis was performed on semi-structured interviews conducted with lecturers and students involved with VLEs. The following themes contributing to levels of engagement emerged 1. Levels of student engagement is strongly dependant on levels of lecturer engagement 2. Lecturer engagement is affected by concerns over re-use of intellectual property 3. Students value the platform most for note dissemination and assignment submission 4. Student value classroom time and this is not undermined by the VLE 5. Training is adequate for basic usage but for more advanced features more training and development needs to be given. Following analysis of these themes six recommendations have been suggested for implementation to increase levels of student engagement with VLEs.

## Chapter 1: Introduction

Virtual Learning Environments (VLEs) are IT systems used to provide students with location independent access to various features in support of their learning experience. These features include access to notes, communication tools such as forums, methods to receive assignment briefs, submit assignments, view timetables and to track deadlines etc. The VLE supports lectures in efficiently delivering courses, reducing the admin burden in distributing notes, administrating assignments and communicating with students. For the lecturer the tools allow amongst other things easy dissemination of notes, provides a record of assignment submission, providing feedback and a method of communicating with students. In addition to the VLE and other college supplied systems students may use a number of additional tools such as WhatsApp, Facebook and Dropbox to support their learning and collaboration which are outside the control of the college. These tools compete with the VLE and are often used by students in preference to similar functionality provided by the VLE. The VLE is most often used in addition to classroom learning a learning model referred to as Blended learning. As the VLE forms a major part of a student's engagement with the third level institution as a part of the blended learning model they contribute significantly to the student's overall engagement with the institution. Increasing student engagement with the VLE is thus important to increase overall student engagement. No formal report on levels of institutional VLE deployment in Ireland was discovered during research but all institutions surveyed used a VLE. Deployment levels are likely to be similar to those in the UK where according to the UCISA TEL survey 2014 100% of institutions reported having a platform deployed (UCISA, 2014, p.20). Where a VLE is deployed it is an important component of student learning. According to (Risquez et al, 2013, p.103) 83% of students in higher education in Ireland access their institutions VLE daily or a few times per week. This indicates the VLE is now a fundamental part of third level education in Ireland.

A VLE, defined by Das (2014, p.41) as a “Web enabled multimedia-driven learning system integrated with synchronous and asynchronous communication tools” consists of a number of components in support of blended learning. There are three implementations of VLEs in common use, commercial products such as Blackboard, open source or free products such as Moodle and custom in-house developed solutions such as the WOLF system described by Dale and Lane (2007, p.101) in use at the university of Wolverhampton. VLEs are often referred to by synonymous names such as Learning Management Systems (LMS) and Course Management systems (CMS) for the purpose of this study all these names can be considered as referring to common platforms such as Blackboard and Moodle. Another common term in use is technology enhanced learning or TEL which is defined by UCISA as “Any online facility or system that directly supports learning and teaching. This may include a formal VLE, an institutional intranet that has a learning and teaching component.” (UCISA, 2014, p.2). VLE platforms can be delivered using internal IT resources or purchased as a service from a SAAS (Software as A Service) cloud provider such as Blackboard Cloud. The capabilities of a VLE include the distribution of notes and additional reading, links to interesting material such as YouTube videos, enabling the online submission of assignments, delivering results, plagiarism checks, online discussion boards, chat rooms and on-line quizzes. In spite of the range of available feature a survey of VLE usage in Ireland (Risque et al, 2013) found that the main use of platforms was in content distribution and assignment submission with less use of more interactive features such as discussions, forums and on-line quizzes. This study will investigate what common features lectures and students use and value as well as possible reasons other features are not used at all or not used to their full potential.

According to a 2104 survey on TEL usage in the UK by the Universities and Colleges Information Systems Association (UCISA) the main drivers for an institution to implement a TEL system ranked in order from one to five are Enhancing the quality of learning and teaching

in general, Meeting student expectations, improving access to learning for students off campus, improving administrative process and to help create a common user experience (UCISA, 2014, p. 12).

Barker and Gossman (2013) conducted a qualitative study with online to assess how the VLE (Moodle) in use at an English sixth form college impacted student learning based on three research questions: whether the use of a VLE has a positive impact on student learning; whether the use of a VLE in teaching and learning helps develop independent learning; and whether the use of a VLE increases students' motivation to learn. All three tested hypotheses were statistically significant and indicate VLE usage increased learning and motivation to learn.

The National survey of student engagement (NSSE) uses five benchmarks to provide a measure of student engagement. Each of the benchmark measurements have been shown to be positively correlated with grade point average and student reported gains in general education, practical competence and personal social growth (Kuh, 2001, p. 3-6). The five benchmarks are the Level of Academic Challenge, Active and Collaborative Learning, Student-Faculty Interaction, Enriching Educational Experiences, and Supportive Campus Environment. Pascarella, Seifert and Blaich (2010), examined the effectiveness of the NSEE benchmarks on measures of student outcomes such as critical thinking, moral reasoning, intercultural effectiveness, personal well-being, and a positive orientation toward literacy activities. They found a positive correlation between institution level scores and measures of the student outcomes after 1 year of college. VLEs can contribute significantly to at least four of the NSSE benchmarks i.e. Active and Collaborative Learning, Student-Faculty Interaction, Enriching Educational Experiences, and Supportive Campus Environment. Developing practical methods of increasing VLE engagement is thus important to contribute to overall student engagement and the resulting improvement in student outcomes.

Trowler (2010, p. 3) formulated the following definition of student engagement based on a meta-analysis of literature definitions and discussions on the character of engagement “Interaction between the time, effort and other relevant resources invested by both students and their institutions intended to optimise the student experience and enhance the learning outcomes and development of students and the performance, and reputation of the institution.” (Trowler 2010, p. 3). Extending this definition to VLEs, engagement with VLEs can be described as the time and effort students and institutions invest in the VLE towards optimising the student experience, enhancing learning outcomes and development of students and enhance the performance and reputation of the institution.

Rovai and Jordan (2004, p. 1) describe blended learning as “a hybrid of classroom and online learning that includes some of the conveniences of online courses without the complete loss of face-to-face contact. They describe blended learning as delivering change in three areas of education 1. Thinking about producing learning rather than delivering learning 2. Reaching out to students through distance education and 3. Focus on an active learning and collaboration though social construction of understanding. In a study of 68 students doing three courses, traditional, fully online and blended learning they found blended learning to produce a stronger sense of community than either fully online or traditional. As the level of community contributes to Astin’s measure of student engagement increasing engagement with a VLE would increase overall student engagement.

Shadow IT is described by Silic and Back (2014, p. 2) as software and hardware solutions used by employees which has not received any formal IT department approval. In the context of the educational institution tools such as Facebook and WhatsApp used by students in preference to similar functionality available within the VLE or the college IT infrastructure can be considered shadow IT. The behavioural drivers behind the usage of shadow IT and their effects on behaviour have not been extensively studied. Mallmann and Maçada (n.d) have

developed a conceptual model to measure these factors but existing research such as Silic and Back (2014) found faster and better collaboration and communications as being the main motivating factors. As these tools are integrated into the VLE the study will investigate if students use Shadow IT and if so why do they prefer this over VLE enabled tools. Hunt (2013, p. 48) highlights the possibilities enabled by new technologies both to enhance learning and introduce more flexibility. It also highlights these technologies as potential disruptive in challenging the traditional role of the institutions. Embracing the innovation provided by these technologies in improving student engagement with the college allows them to be best prepared for this disruption. Thus investigation of student preference for tools both inside the VLE and enabled by external platforms is important for colleges to understand to be best prepared from any disruption which might result.

Much research on levels of student engagement (e.g. Korbova, 2012) reference Astin's (1999) Student involvement theory which focuses on the motivation and behaviour of the student. The aim of this theory is both to provide a common method for researchers to measure and compare student engagement and to assist colleges to in designing effective learning environments (Astin,1999). According to the theory student involvement is "the amount of physical and psychological effort the student devotes to the learning experience" (Astin, 1999) and the success of any college initiative or policy can be measured by determining how much it increases or decreases student involvement. Astin (1999) describes an involved student as one who spends much time on campus, participates actively in student organisations and interacts frequents with faculty and other students. With electronic student aids such as VLEs and blended learning elements such as spending time on campus can be expanded to include time on VLEs, engagement with faculty and other students can be expanded to include items such as online forum, discussion boards, e-mail and announcements, items partially or fully delivered by the VLE. As VLEs are now pervasive and constitute a growing influence the

relationships between students and colleges increasing engagement with VLEs has an important influence on the overall level of engagement and thus the benefits defined by Astin (1999).

Dale and Lane (2004, p. 53-57) suggest ways to increase student engagement with discussion boards and indicate concerns such as the potential to be embarrassed, poor motivation and self-confidence need to be overcome in order to increase engagement. The study will investigate how students feel about using forums and other discussion tools within the VLE in light of the concerns found by Dale and Lane (2004). Where shadow IT systems are used to fulfil these functions outside the VLE it will be investigated how these platforms address the concerns of students and what modifications of the VLE might be possible to make the platform more acceptable for these functions.

The National strategy for higher education to 2030 (DES) highlights the need for improving the quality of undergraduate and graduate student experience and to improve efficiency of resources by sharing services between institutions (Hunt, 2013, p. 97) VLEs have the potential to contribute significantly to the achievement of these aims e.g. a shared platform between colleges or leveraging increase buying power to reduce the cost of cloud based services. Riquez et al (2013) report on a longitudinal study on VLE use in Ireland. This study involves a number of institutions in a quantitative study where students fill out a questionnaire to gather views on VLE use across higher education in Ireland. Part of the recommendation for further research from this study are investigations on the effects of VLE usage on student attendance, investigation on lecturer redundancy and a threat to the traditional role of the lecturer. These issues will be investigated from a student and lecturer perspective and will investigate some of the factors which contribute to these aspects.

## Research Question

This research set out to investigate how student engagement with virtual learning environments can be improved. The outcome of this study will be a number of recommendations for increasing student engagement with Virtual Learning environments when used as part of Blended learning. The study takes a qualitative approach by performing thematic analysis on six semi-structured interviews with students and lectures involved in various ways with the use of VLEs.

## Chapter 2: Method

To answer the research question the opinions of students and lecturers were collected using semi-structured interviews with the aim of identifying themes within their experiences of using a VLE as part of blended learning.

### Participants

This study involved thematic analysis of semi-structured interviews conducted with six participants. All participants have had a direct involvement with a VLE in a blended learning environment. Participants were selected based on recent or current involvement with the VLE and on the range of that involvement with preference being given to participants who had used more than one platform or had been involved with more than one institution. Both students and lectures were recruited as this approach allowed exploration of the issues from both sides, whose engagement with the VLE depended on the other. Participants contacted by E-mail and invited to be part of the study. The participants had been involved in the use of a VLE in a number of different capacities. These included as either a lecturer, student or both. In some cases, the participants had been involved with a VLE in more than one institution or in more than one role e.g. as student in one institution and as a lecturer in another institution or undergraduate student in one institution and as a post-graduate student in another institution. Overall six institutions were represented by the participants. These institutions were Dublin Business

School, Dublin Institute of Technology (DIT), Carlow IT, UCD Smurfit Business School and Trinity College Dublin. The VLEs used by these institutes were a combination of Blackboard and Moodle. Some participants had experience both before and after the VLE was implemented or had seen the functionality of the VLE expanded during their involvement.

### Design

The design was a qualitative study of participant's experience with virtual learning environments by thematic analysis of semi-structure interviews. Following review of current research common issues and advantages of the VLE were discovered. Semi-structured interviews were used as this provided a method to use these findings as a frame to investigate the experience of the participants. Research into VLE use in Ireland had taken a most quantitative approach such as the longitudinal study by (Risque et al, 2013), a qualitative study was the best approach to get further detail around the issues raised. Five of the six semi structured interviews were conducted over the phone and the other was conducted face to face. Appendix A outlines the high level questions which formed the basis for all interviews.

### Materials

All interviews were recorded using a Zoom Handy Recorder H2. Where participants were interviewed by phone, the phone conversation was placed on speaker and the Zoom recorder used to record the conversation. The H2 recorder produces a .wav audio file of the recorded interview. The wav file was converted to mp3 format using the features of the H2 recorder to reduce the size of the resulting files and improve the quality to facilitate easier transcription. A set of questions to frame the interview was created. These questions covered the main areas affecting engagement uncovered during the literature review. As part of the semi-structured nature of the interview, questions were added, removed and modified during the interviews depending on the participant's response. The questions are arranged in seven high level categories in line with the research question. These categories were knowledge of

the systems, training, access, usage and engagement, content, integration with other tools, evaluation and improvement. Questions from each category were interspersed and were modified and reordered based on participant's responses. Where a participant introduced a new idea questions were added to gain further insight into a response. NVivo 10 was used to assist in the Thematic Analysis of the interview transcripts.

### Procedure

In order to answer the research question thematic analysis was performed on the transcripts of the six semi-structured interviews. Braun and Clarke (2006) outlined a method of thematic analysis which involved six steps researchers should go through in sequence. This method has been followed in numerous research papers and set the standard for thematic analysis providing a clear definition of what thematic analysis is allowing for consistent application and interpretation. The six steps approach proposed by Braun and Clarke (2006) are as follows steps 1. Familiarising yourself with the data 2. Generating initial codes 3. Searching for themes 4. Reviewing themes 5. Defining and naming themes 6. Producing report, were performed as follows.

The first step of the sequence was completed by first listening to the recorded interviews, manually transcribing the six recorded interviews into a word document and reading the resulting transcripts and number of times to become immersed in the data. The output of the first step was an initial list of patterns and potential codes, the identified codes were then used to create a set of initial nodes in NVivo. The second step was completed by importing all transcripts into NVivo 10 and performing line by line coding. Codes are represented by nodes in NVivo and each relevant line was assigned to a node. The initial list of codes was as discovered in step 1, where a suitable node did not exist the line was assigned to a new node. After coding the six transcripts there was 171 nodes. The third step involved searching for an initial set of themes within the data. Nodes were combined and within

NVivo to form parent child relationships. Parent nodes were thus a combination of several child nodes which explained larger sections of the data than did the initial nodes. The parent nodes became the initial themes. The fourth step was conducted by further analysing the themes and nodes and reordering where appropriate. This step comprised two phases, first reviewing the coded data for each node and theme to see if it is appropriate. If not data can be moved to another theme. Once all data is considered consistent with the theme the relationship between themes was reviewed with the aid of a thematic map. The fifth step involved renaming themes to more accurately reflect its nature. The sixth step involved the production of this document.



Following the application of the thematic analysis process to the interviews with the six participants the following key themes emerged from the data.

*Levels of student engagement is strongly dependant by levels of lecturer engagement*

The lecturer's level of acceptance and adoption of the VLE was the single biggest contributing factor to the level of student engagement in a given module. "Again if the lecturers had pushed it more, if the lecturer would have used it more we would have used it more. If they use it less we will use it less. We will work around them (Participant 5)." Some lecturers did not use the VLE at all, in which case for that module it would be as if the VLE did not exist and module was run old style with e-mail communication and none of the VLE enabled benefits. "All you subjects are there as well so we wouldn't even click on it if he wasn't going to use, we wouldn't even click on you know his subject title (Participant 5)."

Where lectures used the platform consistently students accessed more often, using more devices and from more locations. E.g. for participant 4 who had used a VLE in two colleges, the college with the more consistent use (this college used Moodle) was accessed more and the relative measure of access he had used across the two colleges was determined by the college and lecture usage.

It was kind of, you would rely more on Moodle that you would have to on Blackboard. I would very rarely have really needed Blackboard apart from PowerPoint notes and hand out notes and that sort of thing... whereas Moodle would have our results, there was a lot of differences like, I found Moodle more organised and more used by the lectures and the students (Participant 4).

Where the college had a more inconsistent usage and less institutional emphasis placed on the VLE the participant noted a reluctance on the lectures to use the platform "The lecturers didn't seem to want to use Blackboard that much to be honest (Participant 4)." Students valued

consistent engagement of the lecturer with the VLE, this allowed the student to be comfortable on how it is used and what is expected of them. When the institution had consistent use of the VLE across modules the students had a clearer view of when notes would be available on the VLE which allowed them to interact with the content in their preferred manner. “Yes I think so, I think it has to be consistent. It is no use for some lecturers using it for some module and other lecturers not. I think a consistent approach is definitely the way to go (Participant 6).”

For example, one of the institutions had a policy that notes would be on the platform 48 hours before the lecture. When this did not happen students highlighted the issue to the course administrator who informed the lecturer. “The engagement of the lecturer was the important bit really to provide the most value (Participant 6).”

In general, there is support for the flexibility of the platform in disseminating material, posting notes, receiving assignment and providing feedback. Where the platform was updated regularly and group communication was facilitated by the platform students tended to use Smartphones and tablets in addition to PCs and laptops. E.g. one user noted that they could log in on their Smartphone on the way to college print the notes online and collect them from a printer when they arrived.

#### Lecturer engagement is affected by concerns over re-use of intellectual property

The biggest concern faced by lecturers is ownership of notes and preventing their unauthorised copying. “That is definitely, absolutely that is a concern of some of the academics here in DIT (participant 6).”

At least one college has taken steps to take ownership of course notes and most lecturers have taken some steps to protect what they consider their own material. The can vary from not posting the notes to the VLE or posting them in such a way as to make copying more difficult. E.g. turn PowerPoint notes into PDF documents.

Some of them just don't want to use it at all, in some case they have to almost be coerced by the college to engage with it. It is never as effective obviously to force somebody to do it as for them to do so willingly (Participant 6).

Concerns over the reuse of content has increased when using the VLE due to the ease of access and ease of copying electronic material. This is not something introduced by the VLE. Copying of and protection of notes is a concern for lecturers that pre-dates the VLE.

Well I had issues with that now when I was in. there is an interesting example of that. I was teaching a shared course in Tallaght at one stage. I found my notes then, I shared them with other people as PDFs but certain people wanted them as PowerPoints and I found my notes then on somebody else's course. that was before having courses on Blackboard was common practice (Participant 1).

#### *Students value the platform most for note dissemination and assignment submission*

All institutions for which the participants had been involved had use the VLE for the dissemination of notes and most had also used the VLE for the submission of assignments and providing results. These features which have been seen to be the most utilised features according to Risquez et al (2013, p. 111- 112) where considered successful and the main benefits of the platform by both students and lecturers. The flexibility of access to the platform both temporally and physical location independence does change the way students studied and prepared for lectures. Participant three had been in the college both before and after online submission of assignments was implemented. As a part time study the participant valued the freedom this gave them allowing to work on the assignment right up to submission time, not needing a hard copy and not needing to travel to the college to submit.

I think that was great, especially when you were doing it part time. You didn't have to actually have to go into the college and you could actually post them electronically and

you could go up to 12 midnight or whatever you needed to do and I think that is a great asset to anybody, especially part-time people (Participant 3).

Most students liked to have the notes before that class but reported a number of different behaviours from lectures on making notes available. Some lectures put all their notes on the VLE at the start of the year and never updated the information. Some lectures released the material after the lecture was over but most released the material in advance. This allowed the students to prepare better for lectures as well as the practical aspect of printing the notes for those that preferred to read hard copies rather than reading from the screen. Participants noted that where students had the notes in advance and had prepared the discussions in the classroom were at a higher level and more enthusiastic. However, there is a concern that students who had not had the chance to prepare may then not get as much out of the lecture.

“It’s the ease of access to the PowerPoints slides before class that is definitely the big thing, and the online submission because that saves you so much hassle (Participant 4).”

Accessibility is everything really like it can prepare you so much better having to go in there, and having to photocopy notes and things, photocopy things out of books, copy notes from a whiteboard and that sort of thing, no it’s a big deal more power to the students at the end of the day you know. And to the lecturers it makes everything easier (participant 4).

Participants did not see the platform as a significant impact on their relationship with the college or a strong determinant of how they perceived the college. While participants had seen the advantage of the system and seen it as a key component of vital functions such as receiving notes and announcements and submitting assignments they did not see it as a major factor in their overall perception of the institution.

Personally I would not put that much say on the VLE, the likes of Blackboard or things like that, I find it's good to have it there but presumably the most important this is the actual lecturer. You know that he or she knew her stuff. I suppose you can't have Blackboard unprofessional looking you have to have it up to a certain degree but you know for me the most important thing is the lecturer themselves (Participant 5).

Lectures also valued the system as a method of students submitting assignments, having a clear record of when assignments were submitted and as a vehicle for providing feedback to the students. "Probably the most useful one is getting the assignments submitted, and allow us to write comments review them back to the students. That is probably the most useful element (Participant 2)."

For note dissemination lectures saw the advantage of having all the notes posted and available because it provided them some protection in case students later claimed an area was not covered. Some lectures placed all their notes on the VLE at the start of the year and were then confident they had fulfilled all their obligations regards note availability. Lectures also noted that visibility of students access to the notes could be beneficial for the students and could work in their favour with the exam board.

I don't know if I'm alone in this it's always the CYA cover your arse and make sure everything is up there so nobody can argue I didn't have the notes or that there was a failing so in some respects it's just for the lecturer to cover themselves and make sure the notes are available (Participant 1).

The ease of placing material on the VLE has the potential to overload the students with a lot of extra reading. In general students appreciated the extra content and items such as links to YouTube videos. Students also noted that although there could be a lot of content this was not something unique to the VLE as lectures often gave long reading lists before the

implementation of the VLE. An advantage of the VLE in this area is that the extra reading is available online they do not need to search for it or book resources from the library. “Oh no my Philosophy is that the more lecturers feel might be relevant to post, anything they feel is somewhat relevant or useful to the students definitely put it up there sort of thing (Participant 4).”

*Collaboration tools are valued but the VLE is not the preferred option for these tools*

Students are familiar with using social and collaboration tools outside the VLE. The standard and ease of use of these tools exceeds what is available within the VLE. In addition to these tools being familiar and of better quality students like to keep some communication away from the institution and view of the lecturers. Students felt more comfortable in asking questions in closed groups or anonymously. Lecturer visibility and peer views were important aspects of this.

I presume students don't want to be, they don't want to admit their weakness so they might not want to ask a stupid question so other students might go god that was a stupid question. I think more so in the classroom than WhatsApp that was more. In front of a lecture you know they did not want to ask a sort of question (Participant 5).

The use of third party tools allowed students to limit the lecturer's visibility of the questions, controls the groups to whom the questions were asked and facilitated asking questions at a more basic level that students may not have been comfortable asking in the classroom. “I would notice that the question would you know be of a more fundamental level on WhatsApp, whereas in the class it might have been brushed over (Participant 5).”

Possible yes, It's not as if it's your Mom and Dad kind of that sort of thing suppose there is that sort of air to it that students maybe want to keep things student and to

themselves. Like all the lectures are great don't get me wrong it's not that, but there are some things that they don't want lectures to know, they are after all marking our coursework and that sort of thing. It's totally understandable like (Participant 4).

Lecturers did point out some positive aspects in having visibility of student's questions and activity. Lecturers could modify content to answer questions as they would have more visibility of what common problems students were facing. Lecturers could understand the effort students were making and in some cases could be used to better understand and aid the student. Lecturers who did try the more advanced features would also have greater visibility on the effectiveness and acceptance of those tools. Overall students like the existing functionality of the system and its main use in accessing notes and submitting assignments. "I don't actually think the VLE lacks that much to be honest. It's pretty functional in what it does already, you can always get better things but it's pretty useful already (Participant 4)."

Third party apps as well as being more familiar are more closely integrated with Smartphone. The Smartphone closely integrates with social media sites allowing flexible access to groups which allows questions and responses to be quicker.

It was easier to take your phone, it was easier to take your pictures, like if you had your notes, if you had a question to ask you could take a picture of whatever was causing you concern and you could post it to the group and somebody might get back to you (Participant 5).

Usage of advanced features and changing the system to add new features can be problematic. This is one advantage of a cloud based services as the systems is always up to date and new features can be requested and added easily. "So it is easier to get them to do it and I would say they are quite good at it here yes (Participant 6)." The quality of third party tools resulting from

their mass adoption and significant investment makes it unlikely for these features to be used even if they could be incorporated into the VLE.

I if think the VLE could provide them to the same level or as good a service I think it just would be easier to use it with one login and you could use all the features of the VLE that would be preferable but I don't think the VLE would ever be as good as other specialist providers (Participant 6).

*Student value classroom time and this is not undermined by the VLE*

Students and lectures both reported that they considered lecture attendance to be largely unaffected by the availability of material on the VLE. Both Lecturers and students believed that there was significant additional insight and discussion in the class and this motivated attendance.

Lectures have a lot of value to bring into the classroom it's not just lecture notes it's a lot more than that. It's and experiential thing as well even in the class room, you know it should be, it's interactive, it keeps the students asking questions of the lectures and answering other student's questions, it's not just 12 PowerPoint pages you know (Participant 4).

The more enthusiastic or ambitious the students the less likely they were to skip lectures. Participant 5 noted that students who were completing a pass degree were more likely to skip lectures than those completing the fourth year of an Honours degree. While this behaviour might have been facilitated by the VLE, similar behaviour would have been exhibited without the VLE where students would have just collected the notes and used them as exams approached. Even for these students the VLE there would have been a benefit as it would organise and archive the notes ensuring they were not disadvantaged by non-attendance.

Now it wouldn't have made our fourth year class skip lectures because they were all very, very good at coming to it. In third year. There would have been lads in third year if all the lecture notes has been up there all together at once they would have printed them off they wouldn't have had the same (Participant 5).

This was also noted for younger students and they were much more likely to just use the notes and depend on studying them at the last minute to get them through. "There was definitely, when you are dealing with younger lads they would have the mentality to just print off the notes and you know and if they thought the notes we're ok (Participant 5)."

*Training is adequate for basic usage but for more advanced features more training needs to be given*

Students and lecturers both agree that basic use of the platform does not require more than basic IT skills. Training given was enough for students to get by with a few exceptions e.g. people on non IT courses and some older users. For instance, participant 6 would have visibility of some of the issues students have and has noted students having problems with systems such as E-mail which might appear easy to others. As there are likely to be a wide range of abilities amongst students the existence of basic IT skills for all should not be taken for granted. "To answer your question a lack of IT skills would, or could potentially affect somebody's ability to use them (Participant 6)." Also for participant there was now problem using the basic features without training. "Well I didn't have any difficulty using it for the four years so it that sense the training did definitely. Emm was enough to suffice for what I needed (Participant 3)." Although the students felt that they had enough skills to use the platform for the most essential features there was a feeling that they could make better use of the system if they had been given more training. "I got the basics, I had enough to get me through all my notes and

the documentation that I needed. But it probably did a lot more behind the scenes than what I availed of (Participant 3)”.

Where lecturers had used the more advanced features they had either learned how to do this themselves or had been introduced to it by colleagues. Users report being aware of extra features but not being sure how to use them. E.g. participant 2 had made attempts to use some of the more advance features and been frustrated at the complexity. The participant noted that most lectures learn from other lectures as they go on and most are aware there are more advanced features that that they could be made aware of.

The lecturers get very little, it’s a learn as you go process. In the Initial stages I found it very frustrating, it is not intuitive and I just found it frustrating to understand how to do things but over time I’ve learned how to use it. I’m probably not using it as efficiently as I could do, but it works (Participant 2).

## Chapter 4: Discussion

Levels of student engagement were found to be highly influenced by the lecturer's acceptance and engagement with the platform. Lecture engagement as a major determinant of student behaviour is consistent with previous research in this area. Umbach and Wawrzynski (2005) used two US national datasets, the National Survey of Student Engagement (NSSE) and a survey of attitudes and behaviours of faculty participating in the NSSE to explore the effect of faculty on student engagement. The results of their analysis showed that students were engaged more in institutions that use active and collaborative learning techniques, engage students in experience, interact with students, challenge students academically and value enriching educational experience. While this study did not study VLEs directly the VLE is a major component of faculty engagement in the modern blended learning environment supporting the collaborative learning techniques found in the study as predictors of student engagement. The VLE allows the lecturer and institution to communicate with students, directly provide or link to multimedia material and provide additional material and quizzes to challenge students academically. This study also found lecturer engagement a strong predictor of student engagement. Through use and support of the VLE the lecturer and institution strongly influence the level of student engagement and the resulting links to performance "The educational context created by faculty behaviours and attitudes has a dramatic effect on student learning and engagement" (Umbach and Wawrzynski, 2005, p.173).

Students did not feel that the existence of the VLE and the availability of notes were less likely to make them attend lectures. This aspect is a common concern for lectures and institutions but this study did not find evidence of reduced attendance. The findings were consistent with those of Risquez et al (2013) where in the latest study only 16% of students felt that the VLE made it less likely to attend lectures. Further this is lower than the previous study in which 21% reported it made them less likely to attend lectures indicating acceptance of the

VLE as a platform supporting not replacing lectures. A related aspect to attendance is consideration of when the notes should be made available on the VLE i.e. before, during or after lectures. Some lecturers had expressed concerns that making the notes available before the lecture would make students less likely to attend. There were a wide range of opinions on this with no one preferred method. Some students like to have them in advance so they could prepare for lectures or print them off the notes. Some students liked them to be available in advance so they could print them but preferred to be introduced to the content for the first time in the lecture. Lecturers also have mixed views on when notes should be made available. This was also consistent with the findings of Risquez et al (2013) where 60% of students reported the content on the VLE made it easier for them to learn and 71% said that it clarified what was covered in class. The VLE was thus seen as more than an information repository or classroom substitute but as an aid to learning effectiveness and flexibility that complemented formal lectures.

This study's findings are also consistent with those of Risquez et al (2013) finding that the VLE constitutes an important aspect of modern education. This is evidenced its pervasive deployment. The tools provided by the VLE operate in parallel with other social and productivity tools such as Facebook, WhatsApp, Evernote and Dropbox. From a control perspective the VLE can be seen as parallel too traditional in house IT systems and the other tools as shadow IT. The quality and familiarity of students with tools such as Facebook and Dropbox make it unlikely that these functionalities within the VLE will gain widespread usage. Analysis of the interviews confirm the VLE as an important aspect in student engagement valued as a tool that enhances the learning experience of formal lectures.

Training on the use of the system by staff was seen as a barrier to implementing the advanced features of the system and to increasing lecturer acceptance. Jenkins, Walker and Voce (2014) recommended that institutions need to reduce conflict by having a clear strategy

on how they use technology enhanced learning (TEL). They note that in the 2014 UCISA (UCISA, 2014) survey of technology enhanced learning that lack of academic staff knowledge had risen as a barrier to the development of TEL. They further note and that institutions need to ensure academic staff are not left behind the “digital divide growing between academic practice and the pedagogic affordances of the technology that institutions have been investing in.” (Jenkins, Walker and Voce, 2014, p.547)

Some aspects such as copying notes, lack of collaboration and aspects of student competitiveness were seen to more related to individual characteristics. As such while the platform may lead to a greater expression of the characteristics the same activity was seen before the VLE and exhibited outside the VLE in the existing classroom.

The ownership of notes and content is not straightforward and is likely to be an area of disagreement between lecturers and institutions. The institution for which participant 2 was involved had taken the position of creating a standard set of notes which any lecture assigned to the module would present as is. The institution maintained ownership of the content and the lecturer delivered that notes provide to them. This however was driven by the need to increase lecture flexibility as a result of short term contracts. Aaron and Roche (2015) found most lectures considered material they had authored to be their own or co-owned with the institution. For classroom notes 37% say they owned the notes, 0% say the institution owned the notes, 42% they and the institution had co-ownership and 21% were undecided. For an online class (where the course was delivered 100% online, not blended) 16% say they owned the notes, 5% said the institution and 53% said there was co-ownership with 11% undecided. Lectures opinions on this included “The instructor spends many unpaid hours developing the material and should have control of the ownership.” and “I am willing to share but should not be forced to give my intellectual property away without my permission.”

Colleges need to address lecturer concerns with the VLE in order to indirectly increase student engagement. Providing a consistent policy to guide VLE use and achieving lecture buy in is crucial. A clear focus on consistent use of the platform around its successful features will both improve engagement and enhance learning. For advanced features, they should primarily be used where they do not compete with superior quality external tools and provide educational specific benefits such as scheduling, plagiarism checks, and features to aid learning such as quizzes or student shared notes, brain dumps or mind maps. In these cases, the student should come first and the institution need to work with the lecture to provide the best and most flexible environment possible “Institutions where faculty create an environment that emphasizes effective educational practices have students who are active participants in their learning and perceive greater gains from their undergraduate experience” (Umbach & Wawrzynski, 2005, p.175).

## Chapter 5: Conclusions and recommendations

Following analysis of the factors limiting student engagement seven recommendations for improvement are proposed. These seven recommendations are, create and agree formal policies with lectures on VLE usage, implement more formal training around the VLE for both lecturers and students, embrace the use of complimentary social platforms in fulfilling some of the functions initially envisioned to be part of the VLE, increase measures to protect content and address lecturers concerns on content ownership, lectures need to focus on adding value to notes and address student privacy concerns in the use of VLE enabled functions. These seven recommendations are elaborated below.

### Six steps to improve student engagement with VLEs

#### *1 Create and agree formal policies with lectures on VLE usage*

Improving lecturer engagement is an indirect but necessary step for increasing student engagement. Once the lecturers demonstrate the importance of the platform for providing notes, feedback and communicating, the students will naturally engage with the platform more. Students who saw the platform being updated regularly also used more methods to access e.g. Smartphones as this provided a convenient way to check on updates. To achieve this, institutions should create a formal policy outlining what the main purpose of the VLE is and how lecturers should use it.

Some courses may be more applicable to VLE use than others. E.g. Psychoanalysis lectures were shown to have a reluctance to use the platform as they did not see it appropriate for their content. Lecturers may be reluctant to comply with policy and the benefits of use for both the student and lecturer should be clearly documented and explained.

Policy on VLE use should be associated with college policy on items such as student focused learning, student benefit, fairness, inclusiveness etc. The overall aim of the college in educating students should drive the policy. E.g. participant 1 noted that their college had a policy of no one left behind and students who found it difficult to attend lectures due to for

instance work or distance should be facilitated as much possible by the VLE in receiving notes and information.

### *2 Implement more formal training around the VLE for both lectures and students*

Basic usage of the VLE is not dependent on advanced IT skills. Most students were happy that they had the level of skills required however this cannot be taken for granted as some users were seen to struggle with even the basic features.

For lectures usage of the more advance features were limited by knowledge of the platform and the incentive to make better use of it. Lectures did say that they were likely to make better use of features if they had been given greater training and awareness of the features. The recommendations of Barker and Gossman (2013) should be considered here in particular the recommendations to provide staff continuous personal development in the use and development of the VLE and to provide minimum standards for the directed use of the VLE by students.

### *3 Embrace the use of complimentary social platforms in fulfilling some of the functions initially envisioned to be part of the VLE.*

Both students and lectures used tools external to the VLE that fulfilled functions which may have initial been considered as functions of the VLE. These features include chat rooms, forums and discussion tools to aid collaboration and assist students understanding and learning course material. These tools are developed quickly and go in and out of fashion. It is not feasible for internal systems to match the features and acceptance of these platforms. The core strengths of the VLE should be developed but largely limited to functions not enabled by these external tools.

Embracing other platforms does not mean there is no role for VLE enabled discussions but realistically these will work in parallel to other platforms. Where VLE discussions are used the findings of Alrushiedat and Olfman (2014) in the using of anchoring in asynchronous online

discussions help provide some guidelines. This study showed that by anchoring conversations around topics providing a focus for the discussion as well as making conversations easy to navigate improved student's self-efficacy in gaining knowledge from online discussions. Lectures can start discussions or join discussions by anchoring the conversation on a relevant topic. Where the conversation was anchored Alrushiedat and Olfman (2014) showed the conversations were easier to join, were more structured and students involved in anchored discussions showed greater exam results on areas they had discussed.

To address one of the main areas of concern found by students i.e. asking questions which they felt were dumb or may demonstrate a lack of knowledge in the area. lectures can set the tone of discussion by anchoring some questions to address some more basic comments. As well as being more likely to join conversations on topics they did not start setting an anchored level for potential conversations would make it more likely that students would be willing to start conversations at this level also. Lectures gain for having visibility of these conversations as they can then target learning at areas where students are having most problems.

#### *4 Implement measures to protect content and address lecturers concerns on content ownership.*

Acceptance of the platform is key to engagement. A major concern of lecturers is ownership of notes and controlling how these can be reused. The ownership of lecture notes is another issue which has existed before the VLE. Colleges and lecturers are likely to have different opinions on ownership and the first step to fixing this is to develop clarification of this ownership. This is likely to be a complex process and some of the issues involved and the steps that have been taken by other colleges have been investigated by Aaron and Roche (2015). This paper provides some quantitative data on lecturers opinion and outlines steps that have been taken to address the issues. It is recommended that colleges become familiar with the issues and attempts that have been made to resolve them by first reviewing Aaron and Roche (2015) and then involving their own staff in discussion on measures to be implemented. This recommendation would be

complex to implement but is an important step in increasing lecture acceptance and thus student engagement with the VLE.

If lecture notes were protected in addition to improving acceptance there would likely be more effort placed in the creation of content with a resultant increase in quality as noted by one lecturer “I would invest more time preparing finished-copy-quality materials (both text and video) for my students that would be publishable, if I knew that I would retain ownership. Otherwise, there is more incentive to do other things, not related to this college (Aaron and Roche, 2015, p.328)”.

*5 Lectures need to focus on adding value to notes and provide anchors for discussions.*

Krause (2005, p.12) outlined suggestions in 10 categories for increasing student engagement. Category nine manage online learning experience with care provides suggestions for ensuring students find value in attending lectures. This study did find students and lecturers both valued lecture time as a necessary addition to the VLE. It was noted however that other student’s particularity those not aiming at high marks may not consider this value enough to attend lectures. It is necessary for lecturers to be cognizant of the changing patterns of education and the likelihood for disruption in the education sector. As such lecturers should consider the recommendations of Krause (2005) which suggests online learning experiences need to be managed to ensure they enhance but not replace formal lectures. The recommendations to achieve this are below.

- Students will attend lectures which are well presented and interesting even if all the lecture notes are available on the Web. Online content is not a substitute for classroom time. As such lecturers need to ensure classroom content, discussion and experience provides sufficient value for attendance (Krause, 2005).
- Lecturers need to develop strategies for encouraging student involvement during lectures (Krause, 2005).

- Use the community building capacities of online discussion forums to connect students both internally and to the wider student population (Krause, 2005).

#### *6 Address student privacy concerns in the use of VLE enabled functions.*

A privacy policy outlining the visibility and acceptable use of the system should be created and agreed with lectures and student bodies. The policy should clearly state what lectures and moderators of the system can and cannot see and how this is controlled. Outlining the contents of this policy should be part of the initial induction training on the system. Allowing students to post anonymously could address some of these concerns but this may require the discussion to be moderated to ensure that questions and answers are appropriate. Where students have used collaboration tools such as WhatsApp, which is not anonymous students seem comfortable with groups as long as they can form them themselves and understand who are members. Some of the reported use of WhatsApp did involve groups where the lecture was a member. Allowing students to set up closed groups of users in the VLE discussion forums may thus be acceptable to some and encourage greater use. Both Blackboard and Moodle have Smartphone apps available may help in closing the gap in accessibility and convenience of interactive VLE features. While some participants did not the use of an app for Blackboard access the functionality implemented seems to be limited. Colleges should consider using the apps and integrating them to the mores interactive VLE features to make the access transparent and similar to tools such as WhatsApp. The Moodle app like the Moodle platform is free, open source and can be easily implemented and customised.

#### *Dissemination*

Dissemination of the findings will follow a three step approach, written dissemination, oral dissemination and usage of social media.

To assist in the written dissemination and to promote use of the recommendations a shortened three-thousand-word paper will be produced and submitted for publication by journals and consideration by educational institutions. A poster and PowerPoint will be constructed from this research and distributed. A short article will be written in a press release format for publishing on social media sites and sending to relevant newsletters.

As part of oral dissemination relevant conferences and speaking opportunities will be investigated. In December 2016 the 9<sup>th</sup> ICEP (International Conference on Engaging Pedagogy) Conference to be held at Maynooth University. The theme of this conference is Voice of the Educator: Connected and Inclusive Learning Environments. The recommendations of this paper are relevant to a number of the stated areas of interest for this congress and will have a suitable audience of those who may be interested in implementing suggestions. The shortened paper and presentation will be submitted by the closing date of October 1<sup>st</sup>. For written dissemination the paper will be made available on the DBS library repository E-source. The paper will also be submitted for consideration by relevant journals. Relevant journals include International Journal of Learning Technology, Learning, Media and Technology, International Journal of Emerging Technologies in Learning (iJET). Journal submissions should be made in sequence focusing on the most relevant journals first and moving to the next most relevant journal if rejected.

For dissemination by social media a link to the article will be published on the [reddit.com/r/psychology](https://www.reddit.com/r/psychology) psychology discussion forum. Reddit allows for the publication of an article and association of the article with a formal level of qualification in Psychology. This allows the article to be reviewed at the level it is produced and allows qualifications to add to the legitimacy of the article and findings. The recommendations proposed by the study will be made available on a Facebook page. This page will include a link to the article. A link to the article in addition to the press release will be published on LinkedIn and posted to relevant

groups such as those involved in lecturing in Ireland and those interested with technology in education.

#### *Limitations and Future Direction*

The indirect approach of increasing lecturer engagement was seen to have the biggest impact on student engagement. As a result, further study into increasing lecture engagement should be explored. This study involved semi-structured interviews with a small number of participants. The participants interviewed had all engaged enthusiastically with the learning experience and their views might differ from those who engaged less or were less ambitious in achieving high grades. All the student participants were mature students who had returned to college and were likely to be more motivated to learn and engage than younger students. The results may differ for younger students or those with less ambition to achieve higher grades.

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## Appendix A

This interview is part of an MSc Thesis in Applied psychology and will be recorded and transcribed as part of the study. The interview will be recorded, transcribed and imported into NVivo. The name of participants will not be included in the final thesis. The questions are in relation to your overall view of the platform and how it is used.

What colleges have you attended?

What courses did you do?

Are you familiar with the term VLE e.g. platforms such as blackboard or Moodle? If not give a short description

What VLEs have been used by these colleges?

Before using the VLE were you given any training or provided with any documentation on how to best use it? Do you think training was/could have improved the usage made of the system? Do you think the training was at the appropriate level or time?

Based on the usability of the platform do you think IT skills are any barrier to usage?

How would you describe the colleges intended purpose for the VLE platform?

Are you familiar with the term Blended Learning? If not give a brief description.

What was your main way of interacting with the VLE e.g. a web browser on tablet/PC or phone? Was there a Smartphone APP? What would be your preferred method in interacting?

What level of emphasis was used placed on using the platform for a: sharing notes and papers b: submitting assignments c: communicating between students d: communicating with lectures/students?

What is your view on the use of the VLE to share information such as YouTube videos and extra reading? Is this used to best effect, relevant, interesting at the right level and amount? Could this be improved?

Does the existence of the VLE and its resources make it more or less likely that you would attend lectures? If notes are placed on the VLE what value do you see lectures bringing to the class above the information available online?

Does the flexibility in when and where you can access the content change the manner or amount you learn?

Did you find a general reluctance from students/lecturers on using the platform? How do you think their usage of the platform could be improved?

Which feature of the VLE did you find most useful?

Did you use any interactive features of the VLE which enabled you to coordinate with other students such as forums or chat groups?

If not did you use any other tools such as Facebook for the same purpose? Why where those platforms preferred over the VLE. If those features were incorporated into the VLE do you think you would use them? What if there was a possibility of login with Facebook ID?

In the context of your studies do you use any tools such as Evernote, Office 365 collaboration such as SharePoint etc., Grammarly.

If there was similar functionality within the VLE would you use it? Why is that?

Do you believe the college is effective in incorporating student feedback into the VLE? Would this be a way to increase engagement?

Do you think student competitiveness impacts the willingness to engage in forums and other forms of online knowledge sharing within the VLE?

Does the visibility of the college lecturers of student activity on the VLE impact how students might or might not use it. Do you think giving the students more privacy or anonymity might improve this?

Are lecturers consistent in their use of the VLE? Would more consistent usage increase engagement? Does the attitude of the lecturer towards the VLE effect the level of engagement? Are the sufficient incentives for the lecturer to use the system?

Level of student engagement with colleges has been shown to correlate with academic achievement. How important was the VLE for your engagement with the college? Was it a major or minor element of your overall engagement with the college.

Does the potential reuse and copying of notes and presentations created by the lecturer impact the willingness to use the VLE? How might this be overcome?

What would have made you engage more with the platform?

What aspect would you add to a VLE to improve the level of student engagement?

Overall what do you see as the main aspects of the VLE in the support of an improved learning experience?