Exploring Student Engagement Across Synchronous and Asynchronous Instruction in Healthcare

by

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Abstract

Student engagement in healthcare education can be a critical factor in actively learning skills that can transfer directly into practice. This small scale research study was focussed on the topic of student engagement in healthcare education. In particular, there were three distinct areas of enquiry, the engagement levels of multidisciplinary staff, the factors that contribute to a successful blended learning programme and finally, what recommendations can be drawn from research and this study to create fit for purpose, robust and dynamic blending learning programmes in the future.

The research was conducted across 3 cohorts of healthcare staff undertaking an Enhanced Clinical Skills programme in a blended learning environment with both traditional face to face sessions and online sessions. The research instrument employed was a self reporting survey, the Synchronous and Asynchronous Engagement Scale (SASES). The research tool comprised three sections, a demographic section, a Likert scale and a qualitative question and answer section. A qualitative and quantitative analysis was used to analyse the results of the survey.

There were four themes identified which were linked to student engagement levels, these were student motivation and engagement, collaborative learning and virtual learning spaces, the importance of accessibility to learning and programme content and relevance.

The results of the study concurred with previous research linking student motivation to intrinsic factors. The findings were also similar to current literature citing content and the activities in the online component as important factors contributing to the success of the blended learning programme.

Even though this was a small scale study it mirrored a number of findings from literature and also provided recommendations for future programmes.

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Introduction

1.1 Introduction

Traditionally learning in healthcare had a pedagogical approach of learning on the job in both the contextual, experiential and active learning senses. Clinical education has traditionally been viewed as comprising of mainly practical on the job learning and academic learning. This practical on the job learning is important to teach learners about attitudes to the profession and also comprises of craft learning.

This research study was undertaken to look at how learning has evolved in healthcare to mirror current learning trends, whereby technology based learning is the main approach bolstered by face to face teaching, rather than the reverse. The research study wanted to look more closely at how learners engaged with new forms of learning, traditionally not related to learning in a healthcare setting.

"*It's not the strongest of the species that survives, not the most intelligent, but the one most responsive to change*". This statement informs a wide range of human behaviours and whether those behaviours continue and pass from generation to generation or are simply phased out in favour of other more resilient and successful behaviours.

(Darwin, C., 1859)

This chapter will examine the background of this research study linking to literature and current practices. The research question is hinged on how learners engage with different pedagogical models outside of traditional models in their discipline. It sought to examine engagement levels in an Enhanced Clinical Skills programme in healthcare and to ascertain the impact of technology based learning on this programme. The foundation of the research question will also be examined and the role of the various components contributing to this research study.

The main objectives of the study were:

- How can all disciplines of healthcare staff remain engaged in blended learning in the workplace?

- What underlying factors could contribute to the success of blended learning programmes in a healthcare environment?

- What recommendations can be drawn from the research and implemented to ensure a robust and fit for purpose learning system for healthcare staff undertaking programmes going forward.

I currently teach a theory and practical skills-based module to multidisciplinary healthcare staff in an acute healthcare facility. The programme relies heavily on the use of group dynamics, non-verbal cues, body language and student-student interaction and collaboration and student-teacher interaction. I have seen first-hand how similar skills-based programmes have made the transition from a traditional synchronous classroom-based approach to hybrid learning, incorporating elements of asynchronous learning. Traditionally healthcare education has been hands on, taught on the job experience for many, and this study will probe the question of the experience of the leaner in terms of their perceived engagement levels.

1.2 Context – Healthcare Education

This study has been based in a large acute level 4 Dublin teaching hospital. Both the researcher and the research audience are a part of the staff in this organisation. The facility currently has over 4200 staff working across 3 different sites on the campus. It is also part of an Academic Hospitals Group and is partnered with Royal College of Surgeons in Ireland and Dublin City University as academic partners. It is the only level 4 Hospital in the Dublin North East region and is the principal teaching hospital for the Royal College of Surgeons in Ireland. The overall population for the region is approximately 1,022,184 with this facility serving approximately 290,000 in the immediate locality with 820 beds.

There are constant challenges and pressures to deliver the best standard of care for all patients in a climate of austerity. Hospital staff and community stakeholders are finding ways of working together to utilise resources to promote community centered care. As the national centre for a wide range of specialities, staff education and promoting lifelong education for all staff became a priority as evidenced in the Beaumont Hospital Strategy & Implementation plan 2015 – 2020.

The facility invested in a new, more accessible method of learning and has introduced a learning management system (BORIS) which will act as a vehicle for both synchronous and asynchronous learning, the definitions for these terms applicable within this research study are defined on page 17. This learning management system is technology based and is built on a Moodle platform. It will enable tutors within the facility to migrate parts of their programmes to hybrid/blended learning programmes.

One of the key strategic directions in the Hospital's Strategy & Implementation Plan is to enable the workforce to help meet growing demands on the service. There is a commitment to work closely with staff to improve the IT infrastructure and develop specialist clinical and post graduate programmes.

This tool will enable all staff disciplines to learn at a time and pace that suits their work life balance. It will open up learning to groups who were unable to attend traditional classroom based sessions and should in time pave the way for more technology based integrated learning in healthcare.

1.3 Background to the Study

In 1859 Charles Darwin wrote about the theory of evolution and the process of natural selection. This process involves genetic changes, whereby these changes are selected based on their usefulness to human survival. The outstanding feature of this process is the protracted rate at which it occurs. This is in direct contrast to the velocity and dynamism of technology-based learning. Darwin's statement about the survival of the fittest resonates when applied to technology-based learning. Blended learning which encompasses face to face learning and learning with technology are becoming part of everyday life and as a race we are constantly presented with micro learning opportunities whether we actively seek these or whether they are accidental learning. Bates & Poole (2003) when researching teaching with technology and the rate at which technology changes have stated that,

> *"…you cannot possibly keep up with the technology. The paradox of technology enhanced education is that technology changes very rapidly and human beings change very slowly"*

To enable learners to feel a part of a virtual classroom space, improved pedagogical approaches and strategies are necessary to bolster the perceived convenience of online learning, to present the learner with the equivalent access to an expert other and their peers that they would otherwise receive in a traditional classroom setting. West & Jones (2007) have reported that students have sought additional opportunities for interaction and this reinforces the view taken by Kim et al (2000) that

a traditional face to face environment is more comfortable and can therefore lead to more collaborative and meaningful learning outcomes.

The style of educational instruction also needs to make this transition from the tutor being the instructor to becoming the facilitator and presenting learning which can be accessed across a continuum and content which provides opportunities for collaboration and creation of virtual spaces and online communities. Learning content needs to evolve and become multimodal to keep up with the transition to a more technology-based learning environment. The engagement level of learners in a traditional face to face environment should be obvious to the tutor present in the room. When we take the tutor out of the equation how do we begin to measure engagement when employing asynchronous instructional methods? Maki & Maki (2000), during their research found that the workload in online offerings was considerably more than in face to face classes.

They also stated that for online learning to be effective the pedagogical strategies employed needed to be appropriate and required opportunities for student-student contact and student – teacher contact. The implications of this research when applied in a healthcare setting could have consequences for learning. If the workload in online offerings is more than in face to face learning how can we expect leaners to undertake more work when they have already been asked to meet a higher service demand on a daily basis. Does then motivation play a part? Do learners have to be intrinsically motivated in order to remain engaged in blended learning?

1.4 Research Purpose

The research topic that this study explored will focus on the levels of engagement of learners in a blended learning environment. For the purposes of this research study the following definitions will apply:

- Synchronous learning will be defined as traditional face to face classroom learning between the expert other and will include peer to peer learning and collaboration in the classroom setting. It will encompass everything about learning that takes place as a live direct observable result of human action and interaction in a face to face context.

- Asynchronous learning will be defined as learning which occurs in isolation, it will include the learners' interaction with technology and will include an element of synchronous learning through online discussion forums and online tutor feedback. Learning in isolation will be measured through the learner's interaction with the learning management system. Their interaction with each element of the programme delivered online will be measured to ascertain high and low engagement areas and activities.

Education and engagement can be defined in many different ways, however, engaged learners are interacting with a particular pedagogical model. Wagner (1994), has defined education as

> "*reciprocal events that require at least two objects and two actions. Interactions occur when these objects and events mutually influence one another*."

The objective of this research study is to explore the engagement levels of learners in both synchronous and asynchronous learning activities and the differences in engagement levels of each modality. It will also identify motivational factors attributed to successful blended learning, that is learning which occurs across modalities, such as face to face and technology based learning, and how these factors can be harnessed to ensure a quality learning experience for all staff.

The main objectives of the study were:

- How can all disciplines of healthcare staff remain engaged in blended learning in the workplace?

- What underlying factors could contribute to the success of blended learning programmes in a healthcare environment?

- What recommendations can be drawn from the research and implemented to ensure a robust and fit for purpose learning system for healthcare staff undertaking programmes going forward.

The researcher currently teaches a theory and practical skills-based module to multidisciplinary healthcare staff in an acute healthcare facility. The programme relies heavily on the use of group dynamics, non-verbal cues, body language and student-student interaction and collaboration and student-teacher interaction. I have seen first-hand how similar skills-based programmes have made the transition from a traditional synchronous classroom-based approach to hybrid learning, incorporating elements of asynchronous learning. Traditionally healthcare education has been hands on, taught on the job experience for many, and this study will probe the question of the experience of the leaner in terms of their perceived engagement levels.

1.5 Role of the Researcher

The healthcare programme that will inform this research study is a programme based on taught Enhanced Clinical Skills for clinical staff. For the last number of years this programme has been taught synchronously in a traditional face to face setting. Last year the introduction of a new learning management system to my workplace, presented the opportunity for this programme to migrate to a blended learning environment. See *fig 1.1* below which charts the Enhanced Clinical Skills programme from classroom based to hybrid learning.

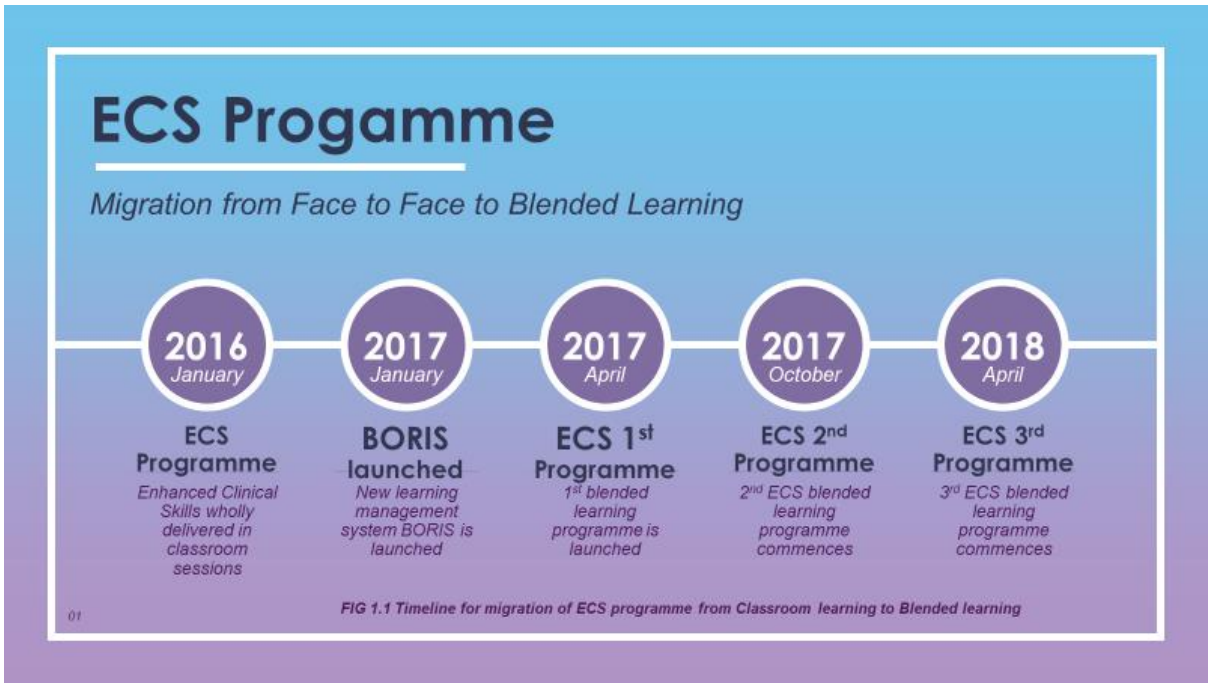

Fig 1.1 Timeline for migration of ECS programme from Classroom learning to Blended learning.

The last three cohorts of students who undertook this programme did so using both synchronous and asynchronous instruction methods. There is a shift in healthcare education to continuously migrate a large proportion of educational content to e-learning, supported by some face to face interaction. The success of the programme, measured by student engagement could act as a model for other similar programmes for healthcare staff. It may also act as a quality improvement indicator for other non-clinical programmes for healthcare staff.

This research study was carried out by surveying the participants from the last three cohorts to measure their levels of engagement across the two types of instructional methods, face to face learning which included active and experiential learning and technology based learning. The aim of this research study is to explore the engagement levels of students who undertook an enhanced clinical skills programme that was taught using blended learning methodologies. The purpose of this research study was to identify where the high engagement levels lie and to build on these, but also to identify where the lower levels of engagement occur and more importantly to build on these to provide a robust programme which is transferable across different healthcare disciplines.

Several research studies in the US (University of Tennessee, Stanford University and US Department of Education, cited in Sheperd, 2015), have found that adding asynchronous instruction methods does provide a correlation in improved learning and knowledge retention. High quality education is important to dynamism in healthcare, simply migrating content to another modality is insufficient. This is

supported by Boling et al (2012) who state that content which is simply transferred across will not challenge higher order cognitive skills. As educators we should be striving to engage students across cognitive, behavioural and emotional domains. The elements of a hybrid programme have the ability to provide this engagement if pedagogical opportunities are created throughout all modes of delivery and this is the challenge associated with any hybrid programme.

The researcher's interest in examining this topic stems from the current programme the researcher teaches, and how a programme that is heavily reliant on non verbal behaviours and cues might translate into a blended learning environment. There is a perception that the interaction of students in the classroom contributes to the learning environment and as a researcher I am interested to see how this would translate in a practical based programme.

Literature Review

This research question is focussed around the engagement of students across a blended learning programme. The engagement of learners refers to the intellectual, emotional and applied interactions that they have with educationally purposeful activities (Kuh, 2001).

The main objectives of the study were:

- How can all disciplines of healthcare staff remain engaged in blended learning in the workplace?

- What underlying factors could contribute to the success of blended learning programmes in a healthcare environment?

- What recommendations can be drawn from the research and implemented to ensure a robust and fit for purpose learning system for healthcare staff undertaking programmes going forward.

For the most part, the effectiveness of any new programme structure is constantly under review, especially when it encompasses a shift in the delivery modality. The most efficient way to review the impact of this change in process is to examine the engagement of learners across the blended learning environment. Using blended learning programmes as a pedagogical model change the dynamic of the traditional teacher-learner relationship and open it up so that no one group is the dominant force. Using technology in this way presents a more collaborative way of

learning between learner to learner and learner to expert other or facilitator. In a study by Alshahrani et al (2017), results showed that learners felt that their self reliance and self confidence had increased when they completed an online programme, which was delivered through blended learning.

In order to fully understand the engagement process, it is important to first understand how we learn as this underpins the many cognitive and physiological changes which take place during learning. The acquisition of knowledge is no longer centered around simple rote learning but instead we are equipping learners with the skills to critically evaluate their own learning. The rise in technology based learning is also giving learners autonomy over their learning and creating communities of practice, (Lynch & Dembo, 2004).

This review will look at the foundations of learning and the evolution of learning from face to face to online learning. It will also examine the role that motivation plays when it comes to self directed autonomous learning. The comparison between technology based learning and face to face learning will also be analysed in terms of engagement, media naturalness and the correlation between activity based learning and overall course results achieved.

This review will be structured to bring the reader on a journey through the many concepts associated with learning. In the same way that natural selection creates dominant traits in humans, lessons learned about the most effective way of imparting information both face to face and asynchronously through technology has contributed

both to the way we teach and the way we learn. Teaching and learning are dynamic processes which are interdependent. It would be naïve for teachers to think that they have nothing to learn from their students. The dynamic nature of teaching and learning allows for adaptation and flexibility. However, clinical education was traditionally delivered using a hands on learning approach, where students to a certain extent learnt on the job. While there is a move towards the increasing availability of online asynchronous learning there is also a recognition that clinical education sits in a blended learning environment Harden et al (2002).

This is further reinforced in a study by Morton et al (2016) where a small scale study was conducted with clinical education students. The findings revealed that students

> *"..do not want to see complete replacement of didactic teaching with online learning*".

The students from this study also valued blended learning and saw it as an acceptable and interesting method of learning.

Current literature terms the acquisition of knowledge through education as an observable change. The learning that occurs creates a change in attitude or behaviour. Crow et al (1963) have described learning as an enabler of change within individuals

to make adjustments in their lives. They go on to further probe this and state that a change in behaviour is as a result of learning.

> "*Learning that occurs during the process of change can be referred to as the learning process", Crow at al (1963, p1).*

Boyd et al (1980) concur with this model of learning, reiterating the idea that learning is seen as a change in behaviour, knowledge, skills and attitude. Illeris (2007) has defined learning as

> "*any process that in living organisms leads to a permanent capacity change and which is not solely due to biological maturation or ageing".*

Most theorists agree that learning creates capacity for change and that change is displayed in a number of ways either through a change in behaviour or a change in thought. Learning opens individuals up to new ideas and ways of thinking, new ways of examining and interrogating information. For this research it is not so much the outcome of the learning, although that can be evidenced in assessments but the involvement of the learners along the learning journey. Allowing learners the time to absorb the material and apply it to their daily work and also to reflect on their learning and begin to think about ways in which they can improve their service through their learning.

Illeris (2007) places the individual at the centre of the process when it comes to learning. He states that learning involves two equal psychological functions, namely, managing the learning content and also the mental energy required to complete that content. In the same way that constructivists saw learning, Illeris also referred to mental schemas in his theories and identified four different types of learning with each type requiring a different level of mental energy. This theory is closely aligned to Piaget in the concepts of accommodative and assimilative learning. In much the same tone Kolb (2014) states that learners should be able to immerse themselves in new experiences. It would seem from the literature that a central theme is emerging between predisposition to learn and the outcomes achieved. In all the models learning is the observed change, but something must pre-empt that change and perhaps this is the role of engagement.

Can we quantify or measure what is it that students find engaging when it comes to learning new knowledge and skills? Krause et al (2008), have described student engagement as the level of commitment and effort that students devote to their learning and Kahn et al (2017) suggests treating students as individuals to maximise engagement. This can be very achievable in a small group situation but may not be realistic in a large classroom environment where specific components must be covered as part of a curricula. The trend to quantify student engagement is now more focussed on the online environment. Instructors can now recognise that learning has migrated into the 21st century and that technology based learning through e-learning programmes, micro learning opportunities and learning bots is constantly rising. Allen & Seaman (2011) have reported that up to one third of US university students were engaging in online learning programmes. Online learning can also create opportunities to treat students as individuals as certain content appropriate to certain students can be

delivered to them, thereby creating a type of a la carte learning. Sibold (2016) talks about the link between motivation and learning and suggests that engagement could be enhanced by enabling students to tailor make their learning. This could be achieved in the process of assessment by giving students the autonomy over which assessment type they choose.

In a paper by Dixson (2015), 186 students were surveyed to ascertain what types of online activities promoted engagement in online content. The purpose of the study was to pinpoint activities that would automatically assist engagement and therefore learning. Interestingly, no one particular activity was identified that could act as a prominent marker of engagement. Online content leans towards the constructivist style of learning. It consists of blocks of learning which are usually sequential with each one building on the knowledge gained from the last. Students who undertake online content are often required to complete more course work than would normally be required in a face to face setting Maki et al (2007). They also reported that students who take online content frequently achieve better results than students in a traditional classroom setting. This finding is echoed by Althaus (2009) who also stated that students had more time to think about their responses compared to a traditional setting and so produced more thoughtful and creative responses. Maki (2007) further concluded that for online instruction to reach its potential it should provide opportunities for interaction to enable learners to feel part of a virtual classroom.

This can be further explored in a study by Hrastinski, (2008) in his findings he reports that e-learners who only experience asynchronous learning feel isolated and do

not feel a part of a learning community. He also agrees with the view held by Althaus (2009) that asynchronous e-learners have more time to understand what is required of them. He has cited an estimate from work by Kock (1995) where an exchange of 600 words takes a face to face group 6 minutes, whereas the same exchange would take up to an hour through e-mail. It would seem from the research that face to face learning happens at a faster pace and has immediate opportunities for peer collaboration.

Perhaps the key to engagement is actually to examine the motivating factors of the student at the outset? Ryan & Deci (2000) have defined motivation as an individual's best performance of a task. They examined whether motivation was internal (intrinsic) or external (extrinsic). The defined extrinsic motivation as being motivated to achieve a specific reward or outcome. In contrast, intrinsic motivation was engaging in a behaviour because it has a personal reward. They went on to develop self-determination theory and within this they identified three factors which heighten motivation; competence, autonomy and relatedness Ryan & Deci (2000). They stated that people were more likely to engage in a behaviour or perform a task if they felt capable of achievement, were interested in the task and had control over the environment. Although motivation can be classified according to the primary reason, it is not that well defined, and lines can be blurred and shift so that it occurs within the band of intrinsic and extrinsic. Knowles (2012) concurs with this view of motivation, crossing the band between extrinsic and intrinsic as adult motivation to learn is created by a need that learning will fulfil.

Research by Ryan & Deci (2000), has demonstrated that learning which is motivated by intrinsic motivation produces better outcomes. Environments and content which allow leaners a sense of autonomy coupled with possessing an aptitude around the content provide better outcomes. It would appear to be cyclical process where motivation feeds into the level of engagement. When the student is engaged with the content it leads to increased achievement and the fulfilment of a need. Dixson (2015) in her study referring to creating effective engagement reported that over two thirds of respondents had higher levels of engagement with the content when there were active activities such as group work, applying the learning to problem solving and case studies. In contrast the lower engagement levels were seen in passive activities such as taking quizzes or watching video tutorials.

Perhaps what is missing in technology based learning is the human element and that sense of belonging to a learning group and learning in collaboration. There can be something very social about attending classroom based learning where there is discourse and peer collaboration. Sometimes in these traditional settings ideas can be explored and manipulated and we can learn as much from each other in these settings. Unless there is some type of e-community, community of practice or the opportunity for a virtual classroom built into technology based learning it seems to fall short in its delivery of outcomes.

If we are to treat learners as individuals as Kahn suggests then as facilitators of learning how can we ensure that an online learning programme is designed as a best fit for everyone? This is a challenge for information technologists and instructional

designers who are attempting to re-design a classroom based event into an alternative modality. We have seen from the literature how better outcomes are achieved when an online learner engaging in asynchronous learning feels part of a community or a virtual classroom, thereby including some type of synchronous online communication. Orlando et al (2015) have recognised this anomaly between face to face and online learning and have stated that

> "*teaching with technology is not a one size fits all approach as it depends on the types of technology in use at the time and also the curriculum content being taught"*.

This is a pertinent point for this research study as currently the blend of the programme being examined here is not individualised and tends to be more task orientated rather than collaborative.

The literature has shown that learners who complete active tasks are more engaged. However, barriers can also occur where learners feel isolated. This can be for several reasons. When completing group work learners may feel anxious about collaboration, there may be a difficulty associated with peer collaboration and assessment. To compound this the teacher may also feel that their own IT skills in creating online content are not sufficient. All of these factors can heighten the real or perceived isolation of the student. When learners are unintentionally isolated there can be no way of knowing their proficiency with technology, it can also be hard to ascertain their levels of competency with the content. As evidenced from the literature,

competency or aptitude with content is a marker for motivation and engagement. For a learner who is struggling to master an online learning modality, further anxiety can be caused by then asking them to collaborate in online groups. This is where blended learning can assist. Jacques et al (2007) have stressed the importance of developing relationships and building in opportunities for social interaction in a group. This contributes to group dynamics and cohesiveness.

Traditional classroom based learning where an expert other facilitates the students' learning by using pedagogies appropriate to the content can contribute to students feeling a part of the learning group. There are other challenges around technology based learning by way of presumption on the part of the teacher that all students are competent using a particular IT system. Modes of communication can prove effective teaching tools in a classroom setting but they are of far greater importance in an online setting. Boling et al (2012) supports this view and states that teachers need to

> *"provide students with experiences that challenge their higher order cognitive skills as opposed to simply transferring content to them"*.

Using different modes of delivery can present opportunities for different learners to engage in a multitude of ways with content and this is true for both the classroom and online environments.

Another method in use in the programme that this research is based upon is the use of other online technologies to support learners and to create a virtual classroom space during periods of asynchronous learning. A social media group has been set up in conjunction with the class tutor where students can interact with one another in a peer to peer setting but additionally allowing for student to teacher interaction. In a journal article by Napier et al (2011) it was reported that students enrolled in online programmes were using alternative forms of IT to provide opportunities for interaction separately to the platform on which their programme was provided. These alternative forms provided a space to discuss topics, prepare group work and plan activities. Technology utilised in this way can provide for learning without borders and it goes beyond the hybrid learning environments. Utilising social media in an educational sense have been seen to positively influence student engagement. (Junco et al 2011) found that the use of the social media tool Twitter can promote student engagement through enhanced communication and interpersonal connections between students.

Building in this level of flexibility by providing different levels and modes of delivery and interaction within a programme provides an inclusive learning environment for students. This socio-cognitive setting provides students with the tools to construct new knowledge and build on it through the collaboration with others. Moore (1993) developed a transactional distance theory. Within this theory distance surpasses actual geography and is considered a pedagogical phenomenon. The distance in this instance is considered to be the level of student engagement with the content and experience. This theory consists of three elements, namely, dialogue, structure and learner autonomy. Dialogue refers to the communication and interaction built into a programme. The structure deals with the design of the programme and the impact that

this brings to bear on learner engagement. In most theories related to engagement there is commonality regarding leaner autonomy and its importance on motivation, engagement and ultimately student outcomes. By creating autonomy for students, educators are enabling them to take responsibility for their own learning. Research by Wynn-Williams et al (2008) shows that students' lack of involvement in their learning can contribute to a reduction in the effectiveness of the learning. In the healthcare environment where this research is currently positioned, it is important to build on and enhance students' current knowledge. As a result of taking the enhanced clinical skills programme students will be more competent in their areas of work. Unlike taking a learning programme in a college or university where it might take some time to apply the knowledge you have learned, this situation by contrast allows knowledge to be applied almost immediately. Creating opportunities to apply knowledge and skills learned in an active learning setting can help students to work together to solve problems and think analytically. In a healthcare environment staff must think on their feet constantly whereas in other disciplines there can be time to make decisions. Paulson (2011) states that efforts should be made to build this type of collaboration and problem solving into education programmes to prepare students to apply their knowledge.

A study by Fitzsimons (2014) focussed on students who were participating in an active learning project. These students were required to learn and act collaboratively in the application of their learned knowledge. Part of the task required the students to work collaboratively in groups on a consulting project for a real life business. They were asked if anything additional could have been built into the learning programme to engage them and to help them learn more effectively. The results clearly demonstrated

that active learning and having the opportunity to apply these skills in a real life setting were key contributors to their learning. Even though this component of their academic programme only counted for a small element of their overall total marks, their assessment through reflections, business feedback, student feedback and student presentations of their learning excelled beyond expectations. This is a significant finding as it is very similar to the setting for the enhanced clinical skills programme. It will be interesting to establish if the students from this research project produce the same or similar results.

Kuh (2009) has examined the concept of engagement and its transition from time on task through to what we now term student engagement, referring to the effort and student involvement in learning activities and he contributes to the research in the same way as many other theorists and writers, placing a link between active learning and engagement. As evidenced it is important to foster the concept of a virtual space for students to continue to learn collaboratively in a hybrid programme. When education programmes are migrated to online learning it can be difficult to sustain motivation. Dietz-Uhler et al (2007) have stated that,

> *"Retention for online courses is usually reported as significantly lower than on courses where instruction occurs face to face."*

This is a constant challenge for educators and students must have some level of self regulation to sustain their own motivation and engagement. Moore et al (2003) have suggested that this could be as a result of competing priorities. Motivation plays

a large part in successful online learning. Findings from a paper by Chakraborty et al (2014), on student engagement and what students want from online courses revealed that students required 4 primary factors for successful online learning. These are a positive learning environment, a community of practice, the provision for timely feedback and regarding technology, using the correct types of technology appropriate to the content being delivered. This is insightful and echoes a large proportion of theories and findings in the literature.

The modalities used, and the content delivered has an impact on learner outcomes. Significantly, Herrington et al (2003) have reported that it is not so much the design of the IT structures but the actual content that makes the difference. This was true for students who were already engaged and motivated. For students who displayed delayed engagement, this can be for a variety of factors. Namely, they may have traditionally experienced face to face learning and are unwilling to change. They can stem from fear of the unknown or that without a teacher there is a perceived withdrawal of support.

Therefore, educators have a duty of care to their students to ensure that programmes that are delivered in a hybrid manner have supports incorporated to promote inclusivity of learning. Technology when used in the correct manner can have an extremely positive impact on learners as it can allow for a variety of modes of delivery suitable to a wide audience. Using social media supports goes some way to preventing isolation of leaners and has the potential to transform learning. Salmon (2011) has stated that even the mode used to submit assessments have the capability to

be flexible using technology and, in this way, reduce isolation, increase learner autonomy and also add an element of choice.

This view is also supported by the theory of media naturalness. Face to face communication can increase physiological arousal and therefore engagement. This is omitted in a purely asynchronous learning environment. Kock (2005), has reported that the absence of face to face communication can have an effect on outcomes. Humans are social animals and prefer face to face contact in communication – defined as media richness. Kock's theory attempts to build on this and take it a stage further. He has theorised that a decrease in the "naturalness" of communication away from traditional face to face can lead to several outcomes. This is evidenced in increased cognitive effort and also increased ambiguity and decreased physiological arousal. This can have an impact for the choice of tools used for technology based education. In the same way that evolution takes account of natural selection, media naturalness also takes account of the evolution of communication modes. Kock's theory has demonstrated that even in situations of low media naturalness communication, students performing collaborative tasks may achieve the same or better outcomes than students who engaged in communication using media with higher degrees of communication naturalness.

As technology is continually evolving, the literature is also evolving to take account of new modalities in asynchronous learning and delivery. How humans learn is also evolving as we are continually being presented with new ways of learning and the associated challenges. The research would appear to suggest that presenting students who are undertaking online or hybrid programmes with diverse opportunities

for learning can have an effect on outcomes. Presenting learning opportunities in a diverse and rich way can also seek to engage and motivate learners on their learning journey. Within this continuum also lies the behaviour of the teacher or expert other. The research has demonstrated how actual geographical distance can be overcome by the use of technology to create virtual classrooms and communities of practice, however, teacher behaviours and in particular the concept of teacher immediacy can also have an effect on outcomes. This theory was originally posed by Wiener and Mehrabian and talks about psychological distance between a teacher and students. It discusses the concept of verbal and non verbal immediacy and how high immediacy behaviours can increase student motivation and satisfaction.

The breadth of literature on the subject of traditional face to face learning or online technology or hybrid learning points to the same conclusions. Student engagement can be measured through outcomes such as changes in behaviour. Positive and high engagement levels are established using a set of parameters. Among these is the motivation to learn and how this is linked to motivation and also to the behaviour of the teacher. This is true for all learning environments. Engagement in online environments can be increased by students having a sense of belonging through the use of social media to create opportunities for interaction and collaboration and ultimately to create a virtual classroom and community of practice. All students value feedback. Technology based learning happens at a particular pace, it is always on learning and educators must adapt their practices in parallel, where they are providing dynamic content in an appropriate way to the technology being used. The methodology and underlying pedagogy for assessment also has an important function in online learning.

Giving students opportunities to apply their learning on the job or in real time can increase deeper learning and higher order thinking skills.

In summary, it is possible to achieve all of these circumstances in a hybrid programme or is it more achievable to choose some factors that will contribute to higher outcomes and apply these with the objective of applying additional factors incrementally as the programme progresses. The review above addresses the different types of learning and the pedagogies that can support this learning. When learning is viewed as a change in attitudes or behaviours it is the responsibility of the expert other to build activities into a programme which can assist engagement and ultimately present learning to create a capacity for change. The literature has also stated that interactions can take place at a faster rate in traditional face to face learning and again when viewing a blended learning programme, it is important to consider activities which can enhance communities of practice and learning groups. Learners who are more involved in their learning through appropriate learning activities and collaborative learning coupled with intrinsic motivation can achieve better outcomes. The challenge lies with subject matter experts to balance opportunities for engagement both synchronously and asynchronously and in doing so giving learners a comprehensive understanding of the skills required.

3.1 Introduction

This chapter will present the methodology employed in this particular study. It will include the different types of research methodologies, the data collection methods employed, pilot study, the research instrument and procedure, the research sample and the validity and credibility of the research.

The main objectives of the study were:

- To ascertain how all disciplines of healthcare staff can remain engaged in blended learning in the workplace?

- To pinpoint what underlying factors could contribute to the success of blended learning programmes in a healthcare environment?

- To draw recommendations from the research and implement these going forward to ensure a robust and fit for purpose learning system for healthcare staff undertaking programmes.

The following will be examined in this chapter:

- The issues in social science research and any implications for this study

- The rationale for the methodology and research designed employed

- The rationale for the subject of this research and the data analysis methods

- The rationale for the choice of survey instrument used

- The reliability and validity of the research study

- Ethical considerations for the research study.

3.2 Qualitative & Quantitative Research Approaches

The ontological paradigm and epistemological methodology that has been applied to this research topic and question is embedded in a constructivist and empirical tradition which gives the research the scope to provide a qualitative and quantitative data set. The researcher initially chose mixed methodology to give an overall fuller picture of the survey responses.

However, there is an acknowledgment that both the qualitative and quantitative data are interdependent. Both data sets are providing both numerical and descriptive data and it is the interpretative tool that provides the diversity of analyses. The data will be informed by self-reporting surveys and in addition an analysis of the students' interaction with Moodle – the IT platform which will operate the online content. The amount of "clicks" on certain components of the online content can be analysed as a representation of student engagement.

However, as a result of using this methodology it is inferred that a rounded data set will be produced and there is a question about other methodologies and what these might add to the analysis of the research question or conversely omit from the analysis. Whilst there are constraints attached to this research, there is an acknowledgement that if sample size and time were not pertinent factors that different outcomes could possibly be achieved.

If a purely quantitative research tradition was employed to this research, there would be a need to align it to a theoretical model. From this theoretical model a hypothesis would be formulated using previous data as an indicator of current trends. If the hypothesis were to support that students undertaking blended learning programmes benefitted from the opportunity to participate in virtual classroom spaces and the opportunity to collaborate virtually then the data set generated would take a different form. One example of this in the literature is a study by McBrien et al (2009) examining student engagement in online learning. This study is hinged on one piece of theory – Transactional Distance Theory by Moore et al (1996).

If this current research were hinged on a previous theory it may be aligned to Kuh (2003, p25) where student engagement is viewed as

"*the time and energy students devote to educationally sound activities*".

Using this model would require sound definitions for time and energy as well as a clear explanation of what constitutes an educationally sound activity. The methodology would be positivism as the dataset would be generated purely from background information contained within a learning management system. As the data would be generated essentially from interaction with technology the knowledge gained would be scientific in nature.

As the data would be scientific in nature it would set a standard whereby a hypothesis is proved or disproved and would provide statistical analysis to support the assertion. If my sample size were larger it would lend itself more readily to this type of analysis.

Revisiting the sample size, and more significantly if the research sample were a percentage of the total staff discipline it may give a more representative and holistic picture. Using a purely quantitative methodology allows the researcher to step back from the research and adopt an objective view. It is simply put, about the formulation of a hypothesis and the proof or indeed disproval of that hypothesis. The researcher in this way can act independently to establish a reliable and credible dataset. Nevertheless, as with all research there are biases and all researchers must be aware of these biases at the outset in a bid to negate them. Utilising a methodology that is purely scientific in nature would mean that any rich descriptive qualitative data would be minimal.

The subject of research will inform the methodology, nonetheless, there is scope within a large percentage of research to enrich the findings with descriptive analysis. If the current research topic were to employ this methodology, it would follow a social constructivist approach. This would focus on the approach that all knowledge is constructed, and that new knowledge is something that is learnt by building on previous known knowledge. Several theorists have written extensively about this type of knowledge construction with Vygotsky (1978) being a leading theorist. Bandura et al (1961) also have a view of learning. Both concur that learning is through interaction, but Vygotsky brings an additional element incorporating the "zone of proximal

development". Within this zone is the connection between what one can learn alone versus how much more we can learn collaboratively.

Basing this current research on this paradigm would lend itself to a qualitative dataset and analysis. There are several methodologies that could accompany this, however, the overarching similarity is to recognise and find meaning within the descriptive analysis. The research area is exploring the engagement levels across synchronous and asynchronous learning with synchronous strictly referring to traditional face to face classroom learning. It is exploring students' experiences of their own perceived engagement with technology and face to face learning. In this way an ethnomethodological approach may be suitable as it would concern itself with the mechanics of how something is happening. Ethnomethodological approaches are concerned with how people use social interactions and knowledge to understand and interpret the world. Equally, a phenomenological approach may also be a suitable approach as it takes account of the impact of the lived experience of the participants.

If a phenomenological approach might reveal how the students felt about undertaking a hybrid programme and moreover, how they felt about their own perceived engagement in both elements of their blended learning. Evaluating data in this way would provide the research with richly descriptive data about the personal experience of participants. The object of the study might be the engagement itself, with the meaning denoted to the participants in as fluid a manner as possible. The phenomena would occur where the participants and the object intersect. The data wouldn't be concerned with the question of causation – what causes or effects

engagement and accordingly this methodology would fall short of what this current research is attempting to achieve.

Additionally, ethnography could be applied. While this comes from a similar background to the other methodologies, the focus lies in cultural groups. I think there could be a strong argument that although all the students undertaking the subject of this research study are culturally diverse they belong to an organisation with strong values and patient care ethos and this could be taken as being the cultural norm for the group. The results produced would be applicable to staff within the organisation who hold the same values and ethos and indeed as the discipline is healthcare the results could be transferable across healthcare organisations. Although this approach would provide rich data for that discipline there would be a question as to the transferability of the research and whether any of the results for this group could be indicators for other groups in the same way that scientific analysis is seen as representative of a population. An ethnographic researcher must remain impartial to the research and must also be extra vigilant about personal bias.

There are some distinct advantages to using a quantitative paradigm, in that the results produced would have a sound scientific underpinning. They would also be representative of a population and so the results could hold true for other disciplines. The results from this type of method would be statistical, as textual responses would be coded, analysed and then to some extent decoded to provide a descriptive analysis to accompany graphs and figures. However, using this type of analysis would omit descriptive data. The rich data that can be elicited from interviews and/or surveys

cannot be underestimated. Albeit it is providing the respondents perceptions of their world it is also providing answers to questions as to how, why and what.

In conclusion, having examined what direction the current research might take with a different ontological paradigm and epistemological method, the preferred method of analysis would be mixed methodology. This will provide an excellent fit for this research in terms of epistemological underpinnings in social science and will allow for rich data to be captured to a point. Moreover, it will also facilitate qualitative analysis with the statistical analysis stemming from participants actual engagement with the learning management system. Utilising this two-pronged approach will also give more rounded results. It will produce scientific statistical data with rich descriptive data which will serve to provide a deeper understanding. Qualitative and quantitative data sets should complement each other and work together to provide a whole account of the findings. The topic of research is exploration of engagement between online and face to face programme delivery and the methodology for the study somewhat mirrors those variables.

On reflection, to provide comprehensive results the analysis will be clearly divided between the empiricism and constructivism paradigms. It is possible to see the precise number of times that a student has looked at or submitted something regarding online content. From that point it would be possible to establish what content was producing the highest engagement rates and perhaps determine the reasons why. However, this is where the textual data will support this analysis by providing

descriptive explanations. The “clicks” ascertained from the learning management system will form the statistical analysis.

The responses from the surveys, both from Likert scales and textual responses have been analysed to establish themes. The emergent themes will then be grouped and linked back to the literature. The literature suggests that there is no difference between outcomes achieved and method of programme delivery. Conversely, there is also literature that suggests that better outcomes can be achieved when students feel part of the virtual community or classroom.

3.3 Data Collection

I have chosen a mixed method approach to this research study employing the following data collection method:

- Self Reporting Surveys :

The researcher initially chose mixed methodology to give an overall fuller picture of the survey responses. However, there is an acknowledgment that both the qualitative and quantitative data are interdependent. Both data sets are providing both numerical and descriptive data and it is the interpretative tool that provides the diversity of analyses. The data will be informed by self-reporting surveys and in addition an analysis of the students' interaction with Moodle – the IT platform which will operate the online content. The amount of "clicks" on certain components of the online content can be analysed as a representation of student engagement.

- Moodle – Learning management system analysis:

As an LMS administrator, I have the capability to work with the programme tutor and look into the back end of the programme to analyse where learner's have engaged most with the programme content by analysing the amount of time spent on a component and also the number of attempts taken to complete a task and which online tasks proved to be most popular.

3.4 Research Instrument & Pilot Study

The research instrument employed is a self-reporting survey – Synchronous & Asynchronous Student Engagement Survey - SASES (Appendix I). It has been adapted from a scale used by Marcia Dixson (Appendix II) examining student engagement in online courses. Dixson (2015) has stated that the engagement level of students is critical to their overall learning. She developed this scale as a methodology for measuring two types of student behaviours – observational learning behaviours (learning that is observed through students' interactions with content) and application learning behaviours (learning that required an action to be performed, such as taking quizzes). The aim of Dixson's scale was threefold. The primary functions of the scale were to aid research into course design, provide feedback to programme instructors about their students' engagement levels and to provide evidence of effectiveness of teaching methodologies. The result of Dixson's study showed a positive correlation between the scale and application learning behaviours and this will be discussed with reference to the results from this research in the following chapter. The original parameters of Dixson's OES Likert scale were retained and the questions were formulated to suit the workplace learning environment. For example, "making sure to use BORIS on a regular basis" and "finding ways to make the course material relevant to my work".

As this is a mixed method approach the scale served as the foundation and was tailor made to suit the research question of the engagement of learners in a healthcare environment. The original parameters of the Likert scale have been retained and the questions were formulated to suit the workplace learning environment.

The survey was also re-designed to incorporate two parts, the first part focussed on the learner demographic and also asked the learner about their level of IT literacy. The second part focussed on the Likert scale and also had additional questions which required textual answers to provide the qualitative dataset.

To ensure that the survey instrument was fit for purpose a pilot study was undertaken in the education centre of the facility. A number of surveys (5), were distributed to multidisciplinary staff who had had some interaction with the learning management system. The aim of the pilot study was to ensure that there was no ambiguous language or questions and that each section was fully comprehensible to users of the learning management system. The feedback from the pilot study demonstrated the need to amend one question and to clarify the meaning of a virtual space as meaning a virtual classroom.

It was a valuable exercise to carry out the pilot study as it enabled any modifications and clarifications to be made ensuring that the finished survey was understandable and fit for purpose.

3.5 Research Sample & Procedure

3.5.1 Sample size

The research sample consists of three cohorts of staff who undertook the Enhanced Clinical Skills programme as a hybrid programme from April 2017 to June 2018. The tutor for the programme provided written permission to the researcher to use the Enhanced Clinical Skills programme as the basis for this research. The total number of staff who registered to attend this programme over the three cohorts was 42. However, due to service demand and work constraints and because this was a hybrid class which required classroom attendance, 6 staff had to defer their attendance. 36 staff members completed the programme. The highest majority of respondents were aged between 20 and 40 years of age and there was an expectation that IT literacy amongst this group would be high.

3.5.2 Data Generation Process

All of the 3 cohorts of staff worked in healthcare, primarily in the field of nursing and were taking this course to improve their everyday practice. Ethical approval was sought for surveying human subjects and an explanatory information letter (Appendix III), consent form (Appendix IV) and SASES survey was sent by email to each participant on the programme. Participants were given a two week time frame to send their replies back. The explanatory information outlined how the data would be stored, what was the purpose of collecting this data and also that when the data was returned it would be anonymised. Participants permission was also sought to use any of the textual answers in the qualitative results. Adhering to ethical best practice,

participants were also provided with the choice to complete the survey in the first instance and also to withdraw from the study at any stage.

After the two week reply period, an extension was added and participants were emailed to inform them and this email also served as a reminder. In total 24 completed surveys were retuned, which is a 67% return rate. Results were analysed and grouped according to the answers provided. A comprehensive analysis of the results will be provided in later chapters.

3.6 Validity & Reliability

All research studies require credibility, reliability and truth. Whatever ontological paradigm and epistemological methodology is employed, ethical approval is required when working with human subjects. No harm, physical or psychological can come to participants because of their participation. To ensure that ethical standards were adhered to an application was referred to the National College of Ireland Ethics Committee outlining the proposed research study. Under the categorisation of ethical risk, this research falls under category C – staff and records. The participants in the research study did not belong to any vulnerable groupings. They have been recruited as they are already a part of an enhanced clinical skills education programme.

As part of the information provided to participants, there was a self reporting survey, participants were also presented with an informed consent form, which contained the detail and nature of the research and the perceived future benefits that the results could have for this type of education. Participants were given the right to withdraw at any stage of the process. The survey responses were anonymous to protect the identity of the participants. The collection of the data from Moodle will be focussed on interaction with activities as a group and will not identify individuals, rather it will reveal how many times a specific piece of content was accessed and so this aspect will not require the permission of the participants. Within the consent and information there was also information pertaining to the storage of data for no more than two years and all data will be password protected and stored on an encrypted memory key. Both the APA Code of Ethics revisions (2010) and (2016) and the Belmont Report (1979), set

out standards for research with human participants, ensuring integrity of research and safeguarding of participants.

Credible research is believable and creates new knowledge or adds to the body of literature on a subject. Using credibility indicators can ensure that biases are managed appropriately and that subjectivities remain consistent. Another important factor taken into consideration was the use of language for survey instruments. As the participants were from different ethnic backgrounds it was important to use language that was clearly understandable and not ambiguous. It was also important not to include any colloquialisms or acronyms.

The expectation is to add to previous literature and findings and produce some new knowledge regarding engagement rates of students participating in a clinical skills programme in a healthcare environment. Finally, it is also important to establish if respondents were not engaged by some online and face to face content and seek answers as to why this occurred. This can serve to improve our pedagogies for hybrid programmes and having this data would be invaluable to a process of continual improvement. Education is a dynamic process and the delivery should be no different.

It is also important to consider any limitations to the research study. The research instrument was modified from the Online Engagement Scale which had previously proved to be a robust instrument for the collection of student engagement data. This would address the question of the validity of the research instrument. In addition to this to ensure the highest levels of validity and reliability the survey was

divided into two parts to encompass both quantitative and qualitative datasets. To further reinforce levels of validity and reliability and additional measure was used and this was the analysis of the learning management system data. The statistics from the learning management system were used to match the response from the Likert scale to create an additional quantitative dataset.

It is also worth considering any intrinsic and extrinsic factors which may have influenced the research results. Intrinsic factors such as gender and age and IT literacy are addressed in the Likert scale and will be analysed in the following chapters.

Extrinsic factors such as the environment, physical factors such as wellness or even perhaps stress at work are outside the control of the researcher. In order to negate these factors, participants were given the surveys and related information to take away either in paper form or emailed. This was to ensure that participants had ample time to complete the survey in a time and place comfortable to them.

The remaining factor which can affect the reliability and validity of any research study is researcher bias. The researcher has no vested interested in the enhanced clinical skills programme. The pilot study ensured that the language in the survey was understandable. The researcher never had any contact with the participants other then sending and receiving information. These measures were put in place to ensure that the researcher and therefore the research remained free of any biases.

Research Results

4.1 Introduction

The main research enquiries in this study were:

- How can all disciplines of healthcare staff remain engaged in blended learning in the workplace?

- What underlying factors could contribute to the success of blended learning programmes in a healthcare environment?

- What recommendations can be drawn from the research and implemented to ensure a robust and fit for purpose learning system for healthcare staff undertaking programmes going forward.

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This chapter will focus on analysing the research that was undertaken to address the research questions. As this is a mixed methods study each element of the research will be analysed separately but with recognition that they are also interdependent.

To facilitate the analysis Braun & Clarke's (2006) structure for thematic analysis will be employed. This model of analysis was chosen for its flexibility with differing theoretical models as well as allowing for the capture of rich descriptive data. There are six steps in Braun & Clarke's (2006) thematic analysis, as follows:

1. Familiarising yourself with your data – during the design of the survey instrument, the researcher became very familiar with the questions being asked of the

participants. When the survey results were received it was important to read through all of the raw data initially before beginning the next steps in the process.

2. Generating initial codes – during this stage of the analysis, coloured highlighters were used to differentiate answers to questions and to begin the process of generating themes.

3. Searching for themes – during this stage, codes retrieved form the previous step were grouped together to form overall themes with some themes containing subsets.

4. Reviewing the themes – this stage of the analysis is comprised of two steps. During the first stage in this step the data is reviewed again to ensure that all extracted data fits into the identified themes.

   For the second step in the thematic analysis, a thematic map was used to link each theme and establish clear relationships where they existed.

5. Defining and naming themes – this step created the narrative for the analysis. Each theme was clearly named and defined.

6. Producing the report – this stage involved linking themes identified back to current literature and drawing comparisons and similarities.

The themes identified from the analysis of the research are as follows:

- Linking Student Motivation to Engagement
- Collaborative Learning & Virtual Learning Spaces
- The Importance of Accessibility to Learning
- Programme Content & Relevance

Each of these themes will be examined in terms of the research and literature review.

4.1.1 Qualitative Thematic Analysis I - Linking Student Engagement to Motivation

Respondents were asked several questions which touched on the motivational theme. The principal question that dealt with motivation was to ascertain the respondent's motivation for taking the course and to decipher if this was extrinsic or intrinsic motivation. The question directly linked to this was "What was your goal with regard to the course?".

Most respondents answered this question in two distinct ways. Over half of the respondents were personally focussed and their responses were themed as follows:

"*my end goal is to broaden my knowledge and hone my skills holistically".*

"I plan to go travelling to Australia next year and wanted to develop my knowledge and skills".

"to improve my clinical competencies, to discuss clinical subjects with other participants, to develop my skills".

"to improve my clinical competencies, to discuss clinical subjects with other participants, to develop my skills"

The remainder of participants were focussed on delivering the highest quality patient care and were taking the programme to enhance those skills. They were less focussed on themselves in the first instance but more focussed on the care of their patients. Tt could be argued that by providing a high quality care service they are by default increasing their changes of promotion. However, their initial primary focus was on others rather than a vested self interest. Some of these responses are as follows:

"*to provide holistic care to patients".*

"I wanted a more in-depth knowledge and ability care for the unwell patient".

"become more educated to allow a high standard of patient care".

"improve my clinical skills and learn breadth sounds"

Within the qualitative analysis there was also a question related to motivation to study and this will be dealt with in the appropriate section.

4.1.2 Qualitative Thematic Analysis II – Collaborative Learning & Virtual Learning Spaces

Research by Jacques et al (2007) has stressed the importance of developing relationships and building in opportunities for social interaction in a group. This is also true for collaborative learning which happens during a hybrid programme. Whilst the initial contact might be face to face in the classroom, in order to maximise student engagement, the literature suggests that virtual classroom spaces can aid as an aid to negating isolation felt by asynchronous learners. For this reason, respondents in this study were asked about their perception of the virtual classroom space.

Several questions were asked regarding this particular theme. Q. Did you avail of social media opportunities to participate? Q. Did you participate in discussion forums regularly? Q. Did you feel that an adequate virtual space/classroom was provided for the online section? If yes, why? If no, why?

Focussing on the first question relating to social media outlets for participation, only two respondents answered negatively for this question. So, overwhelmingly, 92% of respondents availed of opportunities to contact their tutor and to stay in touch with other students on the programme outside of class time and also outside of the structure of the learning management system.

Closely related to the previous question was the question asking about participation, levels in discussion forums. Again, this is viewed as continuing to learn

collaboratively outside of the face to face context. The discussion forums were hosted on the learning management system but were accessible on any device at any time. However, the results for this element of collaborative learning did not show a correlation when compared to discussions held through social media platforms. Only 58% of respondents reported that they participated in discussion forums regularly with the remainder, 42% reporting that they never participated in a discussion forum.

The third and final question enquiring into the element of collaborative learning focussed on directing asking participants what their perception was of the virtual space/ classroom provided. It could be inferred that these virtual spaces were used to create a continuum between the face to face sessions. Participants were asked initially if they felt that an adequate virtual space was provided. Four respondents did not give a yes/no answer for this question. Out of the remaining 20 respondents, 19, equating to 95% reported that there was an adequate space provided, whilst the remaining 5% felt that more could be done to achieve this. Some of the answers from respondents are as follows:

"This was a good resource for everyone to stay involved".

"Maybe a live chat could have helped, amongst users and/or co-ordinators".

"Well organised and facilitated very well".

"With BORIS and emails there was adequate room to learn".

"Link was provided but had to do it at home due to work schedule".

"Plenty of information on the course".

Most respondents to these questions felt that adequate virtual communication opportunities were provided to allow participants to share ideas and also to reference ideas with their tutor. This served to overcome any feelings of isolation between face to face classroom days and in addition to allow students who could not attend on certain days to catch up with their class mates on content they may have missed, thereby fostering collegiality.

4.1.3 Qualitative Thematic Analysis III – The Importance of Accessibility to Learning

Accessibility to learning through the modality of technology-based learning has become commonplace in society today. A report by Allen & Seaman (2013) for a US learning consortium found that 32% of college were undertaking at least one online programme. In tandem with the rise in popularity of online learning, chief academic officers from that study (77%) also reported that online learning is on par with traditional classroom-based learning or indeed better than traditional methods.

Student's accessibility to learning is even more pertinent in a healthcare environment where traditionally learning took place on the job but increasingly the pressures of everyday service demand and staff constraints mean that learning opportunities are being reduced in favour of patient care. This is also evidenced in the survey responses from the participants, some of which are outlined below.

The questions which related to the accessibility of learning asked about the functionality and user friendliness of the learning management system. If something is not user friendly and unwieldly students are less likely to engage. With regard to the user friendliness of the learning management system, of the 25 responses, 1 person did not answer which equated to 87% of respondents reporting that the learning management system was user friendly, while 13% of respondents did not find the system to be easy to navigate and utilise. The responses to these questions are as follows:

"Had just to login to access the course. The content was available according to dates, very easy to search for content"

"because slides for class were available on boris when I missed class"

"it has a simple interface, easy to navigate through"

"it's quite easy to use as I'm able to see all the things/tasks that were posted for ECS. We get message alerts as well".

Conversely, some of the reasons respondents reported that were barriers to their accessibility to learning are as follows:

"but could be easier to access, re app"

"needed to go through nursing first, then specialist practice programme, then to course, so very redundant"

"at first to gain access and login took time, clicking in and out of stuff, once in the programme it was ok"

"too many windows to get to programme"

A lot of the issues identified around accessibility can be easily negated by providing a clear pathway/link to relevant pages and this was feedforward that the programme tutor took after programme one and for the further two programmes provided a demonstration for access and this will be discussed further in the following chapter.

4.1.4 Qualitative Thematic Analysis IV – Programme Content & Relevance

This theme was focussed on identifying whether respondents felt that the content of the programme was relevant and applicable to their working roles. The face to face classroom based component of the programme was broken into nine days in total. Each of these sessions dealt with a different aspect of nursing care and clinical skills and included topics such as frailty, sepsis, neuro-endocrine, enrich programme, cardiac, respiratory, dementia, surgical and final presentations and quality improvement project.

Providing programme participants with learning opportunities which are theoretical in content, but also have a practical application opens up the area of contextual and authentic learning models. This goes back to the researcher's constructivist approach to the research study. The Enhanced Clinical Skills Programme is constructively aligned to provide learners with activities which are meaningful and align with learning outcomes, methods and assessments. In addition, the programme has also been designed to take account of real world situations used in case studies and this is very clearly evidenced in one of the programme days which focussed on "reflection on hard decisions".

Taking programme content and the relevance of that content, participants in the survey were asked in particular whether they felt that the online components of the programme added value in this area. The questions which covered this area were, "Do you feel that the online content and delivery contributed to your learning? If yes, how? If no, why? 24 of the respondents answered this question. Out of these responses, 96%

answered positively that the online components contributed to their learning, with one respondent (4%) answered that the online component did not contribute to the learning. There were also two quantitative questions covering relevancy of material and application to every day role and these will be analysed in the quantitative analysis section. The following responses cover the quantitative feedback.

"It was helpful in remembering the key points of each section".

"Online content beneficial to current profession".

"improved knowledge - quizzes etc very good to improve knowledge - specific to each area".

"relevant to clinical setting".

"it forms a knowledge to back up my skills".

All of the respondents felt that the knowledge gained from the classroom was bolstered by the online content and some also remarked that being able to revise the content online helped in knowledge retention. Knowledge retention could also have been aided by being able to apply the learning between programme sessions and this will be discussed further in the following chapter.

4.2 Quantitative Analysis

In addition to capturing a textual dataset to provide insight into the research topic, it was also important not to ignore any statistical data. Statistical data was captured by analysing the responses from the Likert scale contained within the Synchronous & Asynchronous Student Engagement Survey (SASES). In addition, an analysis was also carried out looking into the frequency data captured by the learning management system. This data was utilised to support the responses from the Likert scale and also to ascertain which aspects of the programme had the most engagement through the online teaching modality. The tool used to analyse all of the statistical data was Microsoft excel. This tool was chosen for its overall functionality, accessibility and ease of use.

The main objectives of the study are:

- How can all disciplines of healthcare staff remain engaged in blended learning in the workplace?

- What underlying factors could contribute to the success of blended learning programmes in a healthcare environment?

- What recommendations can be drawn from the research and implemented to ensure a robust and fit for purpose learning system for healthcare staff undertaking programmes going forward.

Quantitative analysis works best when answers are required to “what” types of questions. It also works well when comparing groups of data. This research study is concentrating on an Enhanced Clinical Skills programme in healthcare, however, three programmes have been run over the last 18 months and so it is important to compare responses from each cohort to provide data that can demonstrate correlations between datasets and also to provide trends.

On first glance the statistics extracted from the Likert scale provide some interesting data to compliment the data extracted from the qualitative analysis. These statistics are analysed further below.

4.2.1 Thematic Analysis I Linking Student Engagement to Motivation

Thematic analysis I was focussed on exploring student engagement levels and whether this engagement was fuelled by intrinsic or extrinsic motivation.

On first analysis of the demographics section of the survey and the questions on the Likert scale “I am always motivated to put effort into my studies” and “making sure to use BORIS on a regular basis”, and the correlated responses were as follows. Participants motivated to maintain their studies were more likely to put in the effort to make use of BORIS on a regular basis and stay up to date on content (64% and 73% correlations respectively).

Interestingly, and linking closely to the theme on Programme Content and Relevance the students’ engagement with the programme increased as the programme progressed. The figures below illustrate this by focussing on student engagement with workbook assignments, engagement with programme resources and student engagement with presentation materials.

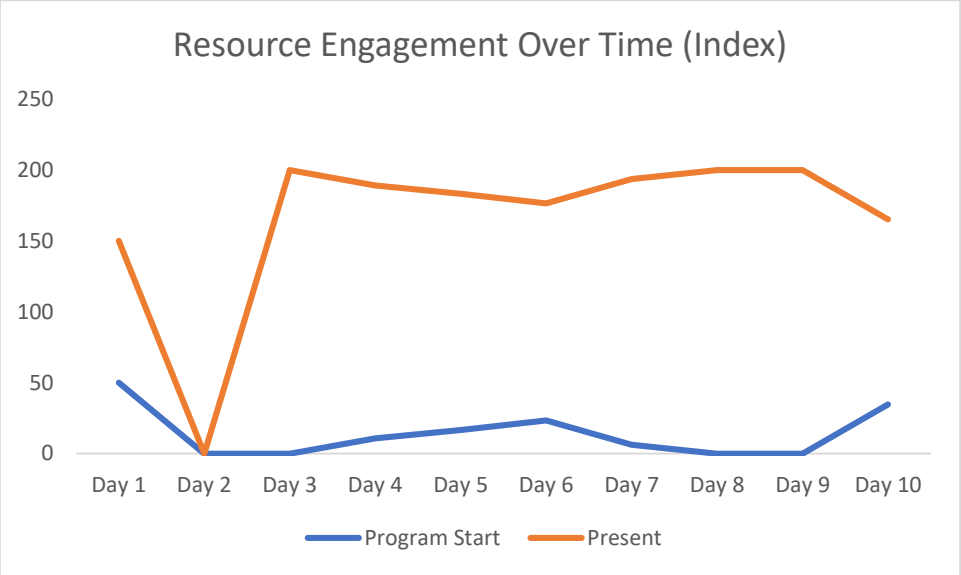

fig 1.2 Student Engagement Levels with Programme Resources Over Time

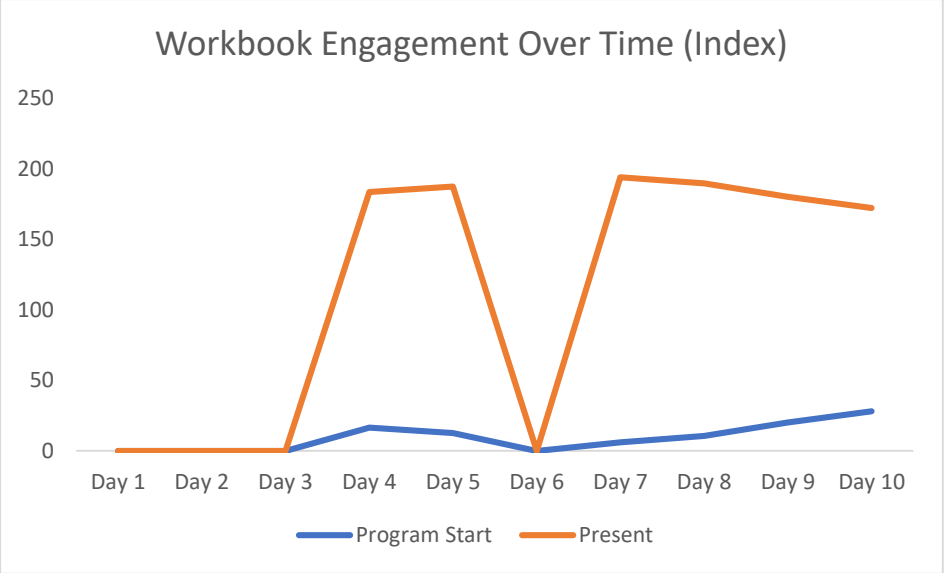

fig 1.3 Student Engagement Levels with Workbook Activities Over Time

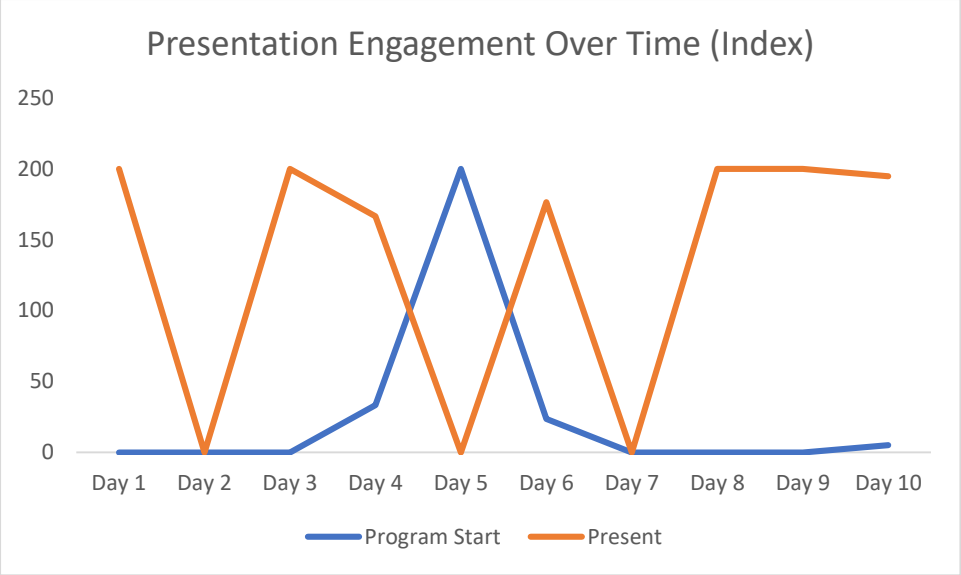

fig 1.4 Student Engagement Levels with Presentation Activities Over Time

It could be argued that this engagement was linked to assignments and also to the final student presentations and so extrinsically rather than intrinsically motivated, however the engagement rates between programme one and programme three showed a marked increase of student engagement with resources. In particular, programme engagement and workbook engagement increased with content availability, particularly with respect to presentations. The figure below illustrates this.

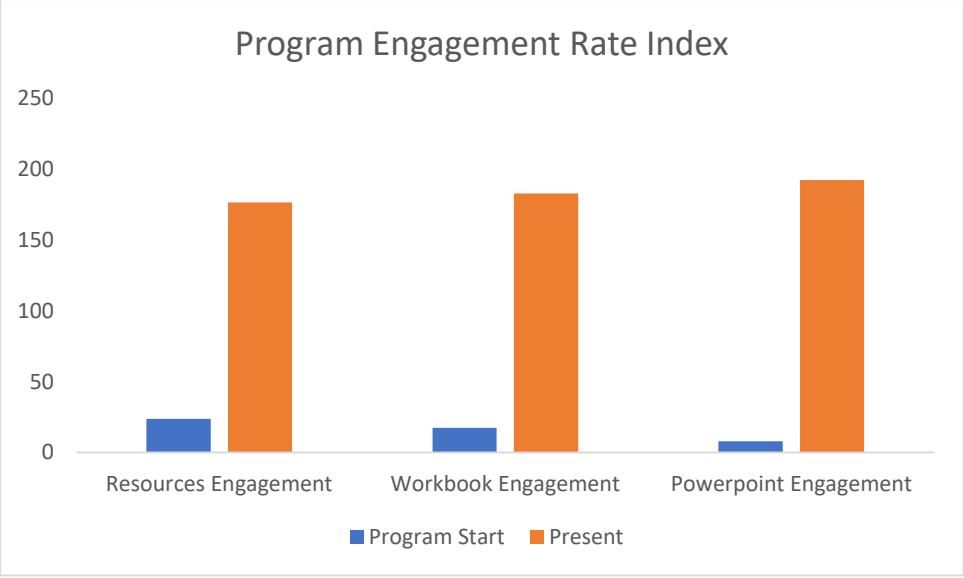

fig 1.5 Student Engagement Levels with Overall Programme Activities Over Time

Forming part of the motivation and student engagement theme, students were asked whether they would undertake another blended learning programme after their experience of this programme. There was a 50% correlation with students with a desire to learn the material influencing the likelihood of online content contributing to their learning and likelihood to take another blended learning course.

The implications of these results will be discussed in the following chapter.

4.2.2 Quantitative Thematic Analysis II Collaborative Learning & Virtual Learning Spaces

Thematic analysis II was focussed on exploring student engagement levels and whether this contributes to collaborative learning. This theme also encompassed the use of virtual learning spaces to combat user isolation in online learning activities.

84% of respondents that had not participated a blended learning course said they would participate in one again. 83% of respondents that had previously done a blended learning course said they would participate in one again (one participant said they would not, which is interesting outlier). Of the 84% who stated that they would participate in additional blended learning programmes the reasons to qualify this can be evidenced in statements provided by the respondents. The main reasons that respondents gave for participation in additional blended learning programmes were access to learning outside of work and worktime, opportunities to share experiences with others, the availability of information re class lectures and other supporting resources. All of these responses point to the accessibility of online learning and content in tandem with sharing information across multimedia to be an important factor in engagement. 18 out of the 25 respondents (72%) stated that they had both helped others and received help from others in their class. Only one respondent in the survey (4%) stated that they had neither helped or received help. This is further supported by 96% of respondents stating that they were able to get to know their classmates and an inference could be drawn from this that they may have established networks within their class groups. However, social media as well as helping/receiving help from other students had little correlation with participants' motivation, engagement and learning

(7-30% correlation). It would seem from these results that virtual learning spaces and the use of social media outlets as contact points for these groups had little impact on their overall engagement and motivation.

4.2.3 Quantitative Thematic Analysis III The Importance of Accessibility to Learning

Thematic Analysis III focussed on the importance of accessibility to learning and 92% of all the respondents answered that that online resources made available to them in the programme content aided them in their studies. In a study by Wong (2013) it was found that when additional online resources were included in an online programme and accessible the to participants that the levels of student engagement rose in correlation with this addition.

To further support this statistic 84% of all respondents made use of the learning management system – BORIS on a regular basis. This figure alone is very high but when coupled with the accessibility percentage of 92% it would point to the indicator that accessibility of learning relates closely to the actual interaction with online learning.

The accessibility and functions of the learning management system, BORIS, contributed to all participants' learning, as well as influencing a participant's likelihood to take another blended learning course displaying correlations of 100% and 72% respectively. The contribution of the learning management system to the participant's learning and user-friendliness both contributed to their likelihood to take another blended learning course and this showed a 72% correlation for both. Taking these results s step further demonstrated that students who had previously undertaken a blended learning course prior to this programme influenced their response to learning management systems and user-friendliness with a 52% correlation.

Another interesting result that emerged was the correlation between age and perceived user friendliness of the learning management system with younger participants reporting that the learning management system, BORIS, was more user friendly and accessible equating to a 69% correlation. Whilst intergenerational and user friendliness was not a question that this study set out to address it is still interesting in light of previous studies of millennials and will be explored in more detail in the following chapter.

4.2.4 Qualitative Thematic Analysis IV Programme Content & Relevance

Thematic Analysis IV focussed on the programme content and relevance. All of the various online activities are outlined the figure below.

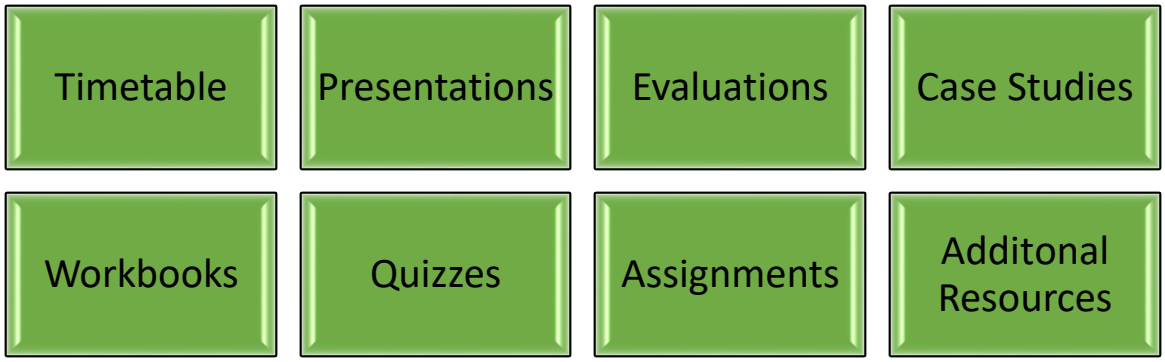

fig 1.6 Enhanced Clinical Skills Online Programme Activities

A variety of the above activities were used across the 9 modules. Each of the nine modules corresponded to the content in a face to face session. The analysis of the learning management system activity views provided the research with statistics for the more popular online activities. There was a 35% higher access rate for workbooks than for supporting material. This may have been due to the fact that workbooks were also viewed as assignments and needed to be completed as part of the coursework. Salmon (2013) has written extensively about student engagement levels in online activities. She terms these "e-tivities". She states that e-tivities are

> "*frameworks for enabling active and participative online learning by individuals and groups.*

In addition to this, there was 35% higher access rate for workbooks than supporting material, with resource access rate increasing by 642% and workbook access rate increasing by 948%. This clearly demonstrates that with an increasing pool of resources, there is a higher likelihood that these resources would be accessed.

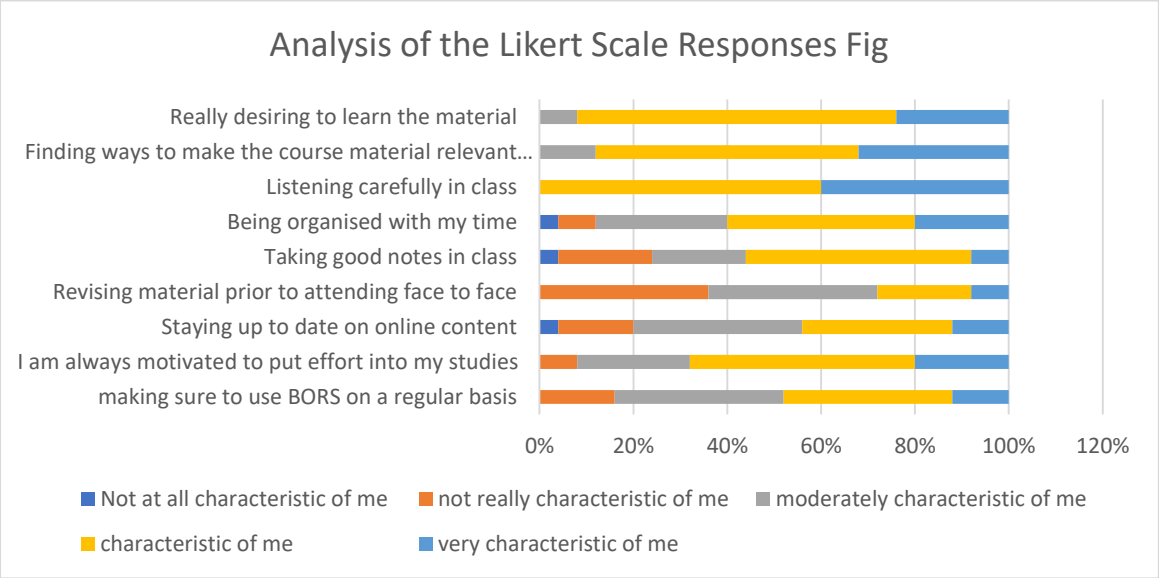

fig 1.7 Student Percentage Responses to the Likert Scale

The analysis of the Likert scale above in relation to the programme content demonstrates that most students fell between the 60 to 80% bracket when asked about differing aspects of the programme relating to content. 56% of the respondents found ways to make the course material relevant to their work. This created an environment where students could apply the learned knowledge to build their skill base. When the results are analysed further, 100% of participants were able to relate the programme material to their everyday role, however, it is difficult to discern the factors that had an impact on those responses.

Discussion of Research Results

5.1 Discussion of Research Results

It is acknowledged in the literature that the addition of several factors can contribute to the success of a blended learning programme. Student engagement is multifactorial, and it is difficult to attribute casual relationships to one factor over another. If we take Kuh's view that the engagement of learners refers to the intellectual, emotional and applied interactions that they have with educationally purposeful activities, this would suggest that learners require educational activities that can be applied. Does this then link into the concept of intrinsic motivation by Deci & Ryan (2000), whereby, motivation was engaging in a behaviour because it has a personal reward. That would certainly "fit" for this study in that the students after fulfilling the course requirements would have gained an organisational award adding to their original qualification. Deci & Ryan (2000), also talk about self-determination theory and within this they identified three factors which heighten motivation; competence, autonomy and relatedness. They stated that people were more likely to engage in a behaviour or perform a task if they felt capable of achievement, were interested in the task and had control over the environment.

The qualitative results from the survey found that over half of the respondents were personally motivated to undertake and complete the programme by the opportunity of attaining an award. They also gave evidence that this award would assist them in their future careers. One respondent also reported that they wished to travel, and this this award would boost their employment profile. The remainder of the respondents reported that their motivation was altruistic in nature in that they desired to provide a better level of patient care. The lines between extrinsic and intrinsic motivation can become blurred and it could be argued that these respondents' initial

motivation was to provide the highest level of patient care, however, in undertaking the programme and gaining the award they have placed themselves above their colleagues in terms of their employment profile and so perhaps had an underlying intrinsic motivation. This is further reinforced by Knowles (2012) who states that crossing the band between extrinsic and intrinsic as adult motivation to learn is created by a need that learning will fulfil.

The qualitative data also enquired into the likelihood of taking another blended learning programme, would there be an appetite for this? In essence, after undertaking one blended learning programme would students be motivated to undertake another programme. It is interesting to note that there is a 50% correlation between students who desired to learn the material and students who would be willing to undertake another blended learning programme. This leads to the question, does a positive educational experience have a positive impact on the learner and produce a drive to undertake more education? And moreover, is this drive fuelled by intrinsic motivation?

As discussed earlier, engagement is multifactorial, it relates to many different factors working in tandem to keep the student immersed in their educational programme. Dixson (2015) conducted a research study to ascertain which types of activities would produce the highest levels of engagement. The results of Dixson's study found that no one activity could be a prominent marker for higher engagement levels. She did however, find that activities that were passive had lower engagement rates than content when there were active activities such as group work, applying the learning to problem solving and case studies. The programme which was the focus of

this research study concurred with the research by Dixson and higher engagement levels were evidenced with activities which required active work by the student.

In Fitzsimons's 2014 study on active learning, students were asked following completion of the study if there was anything additional that could be built into the programme to maintain engagement levels and to help them learn more effectively. The results from that study clearly demonstrated that active learning and having the opportunity to apply these skills in a real life setting were key contributors to their learning. Even though this component of their academic programme only counted for a small element of their overall total marks, their assessment through reflections, business feedback, student feedback and student presentations of their learning excelled beyond expectations. The results from Fitzsimon's research study are very similar to the results from this current research study.

96% of the respondents from this research study reported that the online components contributed to their learning. This can also be clearly evidenced in the quantitative analysis with high levels of engagement demonstrated for educational components that had an activity attached to them. This is seen most clearly in the engagement levels attached to workbooks, resources and presentations. Aligning to each workbook was a case study and assessment. Utilising different pedagogical strategies in this manner make for an interesting and dynamic programme. They allow the student the scope to experience different types of learning and also more importantly learning that is applicable to their everyday working roles. This type of activity based learning has a high impact on the learner as they have an opportunity to immediately apply the skills they have learnt in the classroom or online and put these skills into

practice. One of the respondents commented directly on this and stated that they wanted to recognise breath sounds more efficiently. These are very hands on skills which can have a high impact on the care that patients receive.

In addition to the relevancy of the programme this cannot happen without appropriate content. This is especially true of the healthcare environment where every learning opportunity needs to have a practical application. Harden et al (2002) has reported that there is a recognition that clinical education sits in a blended learning environment this is perhaps due to the subject matter and the use of manakins to teach students and also the use of live subjects to enhance clinical teaching. Manakins currently simulate different clinical diagnoses which the students are then tasked to recognise and diagnose correctly. Clinical pedagogy also traditionally relies on medical rounds as a methodology for teaching students clinical diagnosis in a very real life setting. It would be interesting to compare the outcomes of a real life setting to a simulated technology based setting and to examine the outcomes of both. Respondents from a study by Morton et al (2016) also went on to comment that healthcare students whilst they saw the value in online learning and blended learning, they did not want to see technology completely replacing didactic teaching. The same sentiments were echoed in this research study where all of the respondents felt that the knowledge gained from the classroom was bolstered by the online content rather than the online content serving as the primary teaching method. Respondents reported that the online content was helpful in remembering the key points of each section and that the quizzes were helpful to back up knowledge and learnt skills.

The quantitative feedback also concurred with the role of programme content and relevancy with access rates for workbooks and resources increased as the amount of online resources available to students increased.

Research in the literature by Jacques et al (2007) has stressed the importance of developing relationships and building in opportunities for social interaction in a group. This is especially true for learning that happens asynchronously in isolation to other learners. Opportunities for contact through social media other than the learning management system hosting the online learning programme can offer additional modalities for contact that are accessible to everyone on any device all the time. In parallel to the research by Junco et al (2011) the respondents from this study did utilise social media tools to a high degree to enhance their student to student and student to tutor engagement outside of the classroom. 92% of respondents availed of opportunities to contact their tutor and to stay in touch with other students on the programme outside of class time and also outside of the structure of the learning management system. Some even suggested that live chats could be incorporated into the programme going forward to promote engagement and enhance the range of e-tivities provided.

The results linked to collaborative learning are quite different when that learning is taken back into the learning management system with only 58% of respondents reported that they participating in discussion forums regularly with the remainder, 42% reporting that they never participated in a discussion forum. Within the survey there was a question referring to participants' perceptions of the virtual learning space.

Participants were asked initially if they felt that an adequate virtual space was provided. Four respondents did not give a yes/no answer for this question. Out of the remaining 20 respondents, 19, equating to 95% reported that there was an adequate space provided, whilst the remaining 5% felt that more could be done to achieve this. As this was a blended learning programme in contrast to a purely online offering perhaps the feelings of isolation were less as there were classroom sessions between the online components.

Additionally, when viewing the levels of collaborative learning, 18 out of the 25 respondents (72%) stated that they had both helped others and received help from others in their class. Only one respondent in the survey (4%) stated that they had neither helped or received help. This is further supported by 96% of respondents stating that they were able to get to know their classmates, however, it was not identified whether they established working relationships in the classroom or online. This is supported by Kock's (2005) theory the "naturalness" of communication away from traditional face to face can lead to several outcomes. This is evidenced in increased cognitive effort and also increased ambiguity and decreased physiological arousal. Kock's theory also goes on to illustrate that even in situations of low media naturalness communication, students performing collaborative tasks may achieve the same or better outcomes than students who engaged in communication using media with higher degrees of communication naturalness.

In this research study student collaboration with regard to helping/receiving help from other students had little correlation with participants' motivation, engagement and learning (7-30% correlation). It would seem from these results that

virtual learning spaces and the use of social media outlets as contact points for these groups had little impact on their overall engagement and motivation. It may however, have had an impact on their overall outcomes.

The accessibility to the programme either synchronously or asynchronously also had an impact on students' overall perception of the functionality and user friendliness of the blended learning programme. In a research study by Wong (2013) it was found that when additional online resources were included in an online programme and accessible to the participants that the levels of student engagement rose in correlation with this addition.

The results from this research study would agree with Wong's study, reporting that 84% of all respondents made use of the learning management system – BORIS on a regular basis. This figure alone is very high but when coupled with the accessibility percentage of 92% it would point to the indicator that accessibility of learning relates closely to the actual interaction with online learning. Qualitatively, the questions which related to the accessibility of learning asked about the functionality and user friendliness of the learning management system. Regarding to the user friendliness of the learning management system, of the 25 responses, 1 person did not answer which equated to 87% of respondents reporting that the learning management system was user friendly, while 13% of respondents did not find the system to be easy to navigate and utilise.

Some of the reasons cited perhaps relate to a culture change in the organisation where traditionally the Enhanced Clinical Skills Programme and other related programmes were delivered wholly in a classroom setting. Respondents reported that using the system took time to navigate and find the correct link but that once this link was readily provided it was easy to access and navigate. Conversely a number of the respondents found the learning management system very easy to navigate and reported that the online content was an advantage to the ECS Programme. Some of the reasons for this may have been IT skills of the participants, whether or not they had previously undertaken a blended learning programme or perhaps it may have been generational. This can be evidenced in the perceived user friendliness of the learning management system with younger participants reporting that the learning management system, BORIS, was more user friendly and accessible equating to a 69% correlation.

The accessibility and functionality of the learning management system, did contribute to all participants' learning, and in addition played a part in influencing a participant's likelihood to take another blended learning course displaying correlations of 100% and 72% respectively. The contribution of the learning management system to the participant's learning and user-friendliness both contributed to their likelihood to take another blended learning course and this showed a 72% correlation for both.

Accessibility to learning through the modality of technology-based learning has become commonplace in society today. A report by Allen & Seaman (2013) for a US learning consortium found that 32% of college were undertaking at least one online

programme. In tandem with the rise in popularity of online learning, chief academic officers from that study (77%) also reported that online learning is on par with traditional classroom-based learning or indeed better than traditional methods. Of the respondents who undertook the blended learning programme on the whole after the initial session everyone was able to access the programme with suggestions from some respondents that there should be an app developed to support the programme. It would appear that participants on the programme embraced this new way of instruction for this programme and their feedback will inform future programmes.

Future Perspectives, Limitations & Conclusions

6.1 Future Perspectives

As this research study was a small scale study focussing on one blended learning programme it would be interesting in the future to base a similar study on an organisational wide mandatory programme which employed blended learning. This may provide different insights into the engagement to multidisciplinary staff and may show different results for engagement with different activities be they classroom based or as Salmon has termed them, e-tivities. Caution would have to be exercised however as utilising a mandatory programme would elicit different motivational factors.

This research study was a snapshot of three cohorts who had undertaken the Enhanced Clinical Skills blended learning programme. For future research it would be interesting to gain access to student results and to compare these to their engagement over the course of the programme. This may provide a more complete picture of the students' learning experience over the course of the programme. This is something worthy of attention in a future similar study.

Indeed, it may also be interesting to apply a measure to see exactly how the participants were applying their learning whilst on the job. This could be facilitated with the aid of a preceptor who could monitor the students' performance over the course of the programme. The inclusion of this further measure would lend itself to fully measuring the learning outcomes from the programme and also to see how the knowledge and skills learned both face to face and online were applied in practice.

6.2 Limitations

It is acknowledged that there are various contributing factors that may have influenced the outcomes of this research study. There were several factors which were not taken into account which may have altered the results, and these would be worthy of attention if a similar research study were carried out in the future.

The results of this study may have been affected by the fact that attendance in class was not measured and compared against engagement in the corresponding online module. However, there is also an acknowledgement that further permission would need to be granted from participants to access their personal online records to ascertain how long they had each spent interacting with a particular online module. It is clear from the results of this study that some modules had the minimum or none online views and if this were included in the survey it may have posed questions for some participants about their participation that they would prefer to remain private.

Another interesting area for future research would be to gain access to the social media outlets used by participants. This was outside the scope of this study as this research was focussed on student engagement levels within the learning management system and face to face learning environment. It may however, be interesting in the future to compare how often students are using external social media opportunities and internal learning management system functionality such as forums and discussion boards. This could inform the design of future programmes by including alternative contact sources and activities to boost student engagement and also to combat the isolation of learners in a purely asynchronous learning environment.

One final factor that was not taken into account at the outset of this study was the ethnicity of the participants. Whilst the learning management system and the emergence of blended learning programmes is a culture change for the organisation it may also be a change in instructional practice for many of the staff who attended the programme. Most of the respondents reported that this was their first blended learning programme and it would be interesting to ascertain if this was due to the organisational culture change or other factors.

6.3 Conclusions

This research study set out to address the overall question of student motivation in a blended learning programme in healthcare. Several strands of enquiry were employed to ascertain engagement levels and where these might be improved going forward. The study also sought to focus on the factors which contributed to higher levels of student engagement and how these could be modified for future programmes.

The main research enquiries in this study were:

- How can all disciplines of healthcare staff remain engaged in blended learning in the workplace?

- What underlying factors could contribute to the success of blended learning programmes in a healthcare environment?

- What recommendations can be drawn from the research and implemented to ensure a robust and fit for purpose learning system for healthcare staff undertaking programmes going forward.

Learning is a dynamic process continually adapting to suit its environment. This is exceptionally true of online learning environments where developments in technology and how they can and are applied to learning happens at a rapid pace. Innovators are continually developing software for various industries and educators and seeking out opportunities to review how this could be applied to learning environments.

The next generation will have a completely different learning experience to the last and this can be evidenced in millennials who have come to expect a culture of always on accessible learning.

This has a twofold impact for educators. They need to upskill their practice to enable them to interact with technology and create opportunities for students to interact with their learning environment, the learning content and each other. The research has demonstrated that student interaction with their peers through group work, peer collaboration and also face to face interaction can have a beneficial effect on outcomes. The challenge is building these interactions into constantly evolving curriculum. The second impact for educators is the provision of engaging learning content appropriate to the mode of delivery. This has particular significance for students as it has an impact on motivation and therefore engagement. Content appropriate to the mode of delivery fulfils certain criteria and enables students to learn in an engaging way.

However, for students to be engaged in the first place there needs to be a certain level of interest in the programme they are undertaking. This could be viewed under the tenet of motivation. Research has shown that motivation and engagement are interdependent and in the same way that knowledge is constructed, motivation and engagement are cyclical and can provide a scaffolding for learning.

In conclusion, even though the modalities through which we learn have changed the initial motivators remain the same. The challenge for educators is sustaining this motivation throughout a programme's duration and this can have added difficulties

when learners are learning asynchronously. The concept of communities of practice and virtual classrooms is evidenced in the literature as a method of combatting isolation for e-learners.

The implications for learning into the future are many and varied. Furthermore, educators must take every opportunity to create learning that is accessible. The virtual classroom is a reality, learning without leaving home is a reality. Even learning synchronously in real time in an asynchronous isolated learning environment is a reality. The next steps are to take these modalities further. Future learning could be completely personalised with the aid of artificial intelligence through chat bots. This will challenge educators even further to match content to modalities. Technology has the power to transform how we learn but ultimately it is our interaction with it, teacher and student alike that will make the difference.

Most of the results from this small scale study concur with the current literature. Engagement is not an exact science and is multifactorial and relies on a number of different factors at any one time dependent on the subject matter, participants and modality. If a larger scale study was carried out it would be interesting to compare the results.

To address the topics of enquiry at the outset, ensuring that staff remain engaged is allied to their initial motivation for undertaking the programme as well as the perceived benefit at completion. However, how does this transfer if the programme in question is mandatory and there is no final award. This relates back to employee

satisfaction and ensuring that your employees are motivated to perform to the best of their ability and ensuring that supports are in place to achieve this.

This research study has identified a number of different factors which can contribute to the success of a blended learning programme. Primarily access to the online portion of the programme on any device. Troubleshooting advice from this research would suggest that clear links to the programme should be furnished at the outset to ensure that everyone has a positive experience for their first introduction to the online component. Also, the range of e-tivities on offer also has an impact on learning with respondents reporting that quizzes served to reinforce knowledge and that having face to face content and online content online provided a benefit. This research study also found that engagement levels with the online material rose in tandem with the amount of resources made available online to participants.

The findings from this research study that will inform future studies will be focussed around content and accessibility. Suggestions for live chats and other online modalities will also be taken into account as will the IT literacy levels of the participants. In addition, there is also scope for more online media tools to be employed to provide a better experience and to foster collegiality and communities of practice.

LIST OF FIGURES

APPENDICES

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SASES – Synchronous & Asynchronous Student Engagement Survey	I
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APPENDIX I

SYNCHRONOUS & ASYNCHRONOUS STUDENT ENGAGEMENT SURVEY (SASES)

Synchronous & Asynchronous Student Engagement Survey

Please fill in each section by ticking the appropriate box or by providing a text answer.

Thank you for your participation

Chapter 9 Part One	Chapter 10 Responses – Please tick
Please state your gender	Male ☐ Female ☐ Other ☐
Please state your age	20-30 ☐ 31-40 ☐ 41-50 ☐ 51-60 ☐ 60+ ☐
Why did you decide to undertake the Enhanced Clinical Skills Programme (please give a short text answer)	
Have you undertaken any other blended learning programmes?	Yes ☐ No ☐ Not Sure ☐
How would you rate your IT literacy skills	Very Good ☐ Good ☐ OK ☐ Fair ☐ Poor ☐

Part Two

Thinking about your Blended Education Programme – how well do the following behaviours, thoughts and feelings describe you? Please use the following scale:
1 = not at all characteristic of me, **2** = Not really characteristic of me, **3** = moderately characteristic of me, **4** = characteristic of me, **5** = very characteristic of me

Making sure to use BORIS on a regular basis	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
I am always motivated to put effort into my studies	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
Staying up to date on the online content	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
Revising material prior to attending face to face class	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
Taking good notes in class	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
Being organized with my time	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
Listening carefully in class	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
Finding ways to make the course material relevant to my work	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
Were you able to apply the course material to your everyday role?	Yes ☐	No ☐	Not Sure ☐		
Really desiring to learn the material	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

Please turn over.....

Did you avail of social media opportunities to participate, whatsapp etc	Yes ☐ No ☐ Not Sure ☐
Did you actively participate in classroom discussions	Always ☐ Sometimes ☐ Never ☐
Did you help fellow students or did you receive support from other students	Helped others ☐ Received support ☐ Both ☐
Did you participate in discussion forums regularly	Yes ☐ No ☐ Not Sure ☐
Did you get to know other students in the class	Yes ☐ No ☐ Not Sure ☐

Please provide a short text answer to the following questions:

Did you feel that an adequate virtual space/classroom was provided for the online section? If yes, why? If no, why?

What was your goal with regard to the course? Please elaborate…

Do you feel that the online content and delivery contributed to your learning? If yes, how? If no, how?

Was the BORIS system user friendly? If yes, how? If no, how?

How did you find the functionality of the BORIS system? Did it meet expectations?

Based on your experience during this programme would you undertake another blended learning programme? Please give reasons why/why not.

APPENDIX II

THE ONLINE STUDENT ENGAGEMENT SCALE (OSE)

Measuring Student Engagement in the Online Course: The Online Student Engagement Scale (OSE) Appendix A Online Student Engagement Scale (OSE)

Within that course, how well do the following behaviors, thoughts, and feelings describe you? Please answer using the following scale:

1. not at all characteristic of me
2. not really characteristic of me
3. moderately characteristic of me
4. characteristic of me
5. very characteristic of me

1. Making sure to study on a regular basis

2. Putting forth effort

3. Staying up on the readings

4. Looking over class notes between getting online to make sure I understand the material

5. Being organized

6. Taking good notes over readings, PowerPoints, or video lectures

7. Listening/reading carefully

8. Finding ways to make the course material relevant to my life

9. Applying course material to my life

10. Finding ways to make the course interesting to me

11. Really desiring to learn the material

12. Having fun in online chats, discussions or via email with the instructor or other students

13. Participating actively in small-group discussion forums

14. Helping fellow students

15. Getting a good grade

16. Doing well on the tests/quizzes

17. Engaging in conversations online (chat, discussions, email)

18. Posting in the discussion forum regularly

19. Getting to know other students in the class

APPENDIX III

PARTICIPANT EXPLANATORY INFORMATION LETTER

PARTICIPANT INFORMATION LEAFLET

Study Title : Exploring Student Engagement Across Synchronous & Asynchronous Instruction in Healthcare Education

You are being invited to take part in a research study. Before you decide whether or not to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully

WHAT IS THE PURPOSE OF THIS STUDY?

This research study aims to explore levels of student engagement between synchronous and asynchronous programmes in a healthcare setting. The main purpose of this survey is to determine where the highest levels of student engagement occur, either in a synchronous classroom environment or in solitary online asynchronous learning. Or to discover if the method of programme delivery has no effect on student engagement.

WHY HAVE I BEEN INVITED TO PARTICIPATE IN THIS STUDY?

You have been invited to take part as you had been/are enrolled on the Enhanced Clinical Skills Programme.

WHAT WILL HAPPEN IF I VOLUNTEER?

If you agree to take part, you will be asked to complete a survey and consent form. The survey contains 3 parts. Part 1 is a general area that encompasses the demographics. Parts 2 and 3 are a self-reporting questionnaire which should take no longer than 15-20 minutes to complete.

The survey will assess certain attitudes and beliefs you may hold with regard to your learning as well as focussing on aspects of blended learning and engagement.

CONFIDENTIALITY

All information you provide as part of this study will remain confidential. Your identity will not be revealed while the study is being conducted or when the study is reported. Individual quotes may be used when reporting the findings but no information that can identify you will appear in these quotes. The survey responses are anonymous. All information will be kept confidential and used for the purpose of this research study only. Hard copies of documents will be scanned and only retained on an encrypted memory key for a period of no longer than 5 years.

ARE THERE ANY BENEFITS FROM MY PARTICIPATION?

The information obtained from the surveys will provide further knowledge of the factors which can influence student engagement in blended learning programmes in healthcare education.

ARE THERE ANY RISKS INVOLVED IN PARTICIPATING?

There are no identified risks associated with participating in this study.

WHAT HAPPENS IF I DO NOT AGREE TO PARTICIPATE?

Participation is completely voluntary.

If you do decide to take part, you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part, you are still free to withdraw at any time and without giving a reason.

If you wish to take part, please opt in to the research study by returning your completed survey and completed consent form. Your time and care when completing the questionnaire would be greatly appreciated.

Thank you

Please do not hesitate to contact me with any questions you may have:

Ms. Paula Chapman (researcher)

Ph: 087-2456292

Email: x97906107@student.ncirl.ie

APPENDIX IV

PARTICIPANT CONSENT FORM

CONSENT FORM

Exploring Student Engagement Across Synchronous and Asynchronous Instruction in Healthcare Education

Researcher : Paula Chapman

Email : x97906107@student.ncirl.ie

		Please initial box
1.	I confirm that I have read and understand the information sheet for the above study and have had the opportunity to contact the researcher with any questions.	☐
2.	I understand that my participation is voluntary and that I am free to withdraw at any time, without giving reason.	☐
3.	I agree to take part in the above study.	☐

		Please initial box	
		Yes	No
4.	I agree to the use of anonymised quotes in publications	☐	☐
5.	I agree that my data gathered in this study may be stored (after it has been anonymised) securly for no longer than 5 years.	☐	☐

_____ _____ _____

Name of Participant Date Signature

Please return your completed consent form with your completed survey. Once returned your consent form will be scanned and the original destroyed. Your survey responses are confidential and are anonymised.

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