# Student Jam:

# Investigating Online Learning Environments for Students with Specific Learning Difficulties

By

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A Thesis Submitted for the Degree of Master of Science

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Submitted to Waterford Institute of Technology, June 2013

The author hereby declares that, except where duly acknowledged, this thesis is entirely his own work and has not been submitted for any degree in Waterford Institute of Technology or in any other academic institution.

Brian Michael Caffrey

June 2013

To my wife, Olivia.

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# List of Acronyms used

**ADD:**        Attention Deficit Disorder

**ADHD:**      Attention Deficit Hyperactivity Disorder

**ADHD-C:**   Attention Deficit Hyperactivity Disorder (Combined type)

**ADHD-I:**    Attention Deficit Hyperactivity Disorder (Inattentive type)

**ADHD-H:**   Attention Deficit Hyperactivity Disorder (Hyperactive type)

**ADHD-HI:**  Attention Deficit Hyperactivity Disorder (Hyperactive-impulsive type)

**ADHD-PI:**   Attention Deficit Hyperactivity Disorder (Predominantly-Inattentive type)

**APA:**        American Psychiatric Association

**ASD:**        Asperger Syndrome Disorders

**AT:**          Assistive Technology

**CC:**          Creative Commons

**DSM-IV:**   Diagnostic and Statistical Manual of Mental Disorders, 4th Edition

**DSM-IV-TR:** Diagnostic and Statistical Manual of Mental Disorders, 4th Edition, Text Revision

**DSM-V:**    Diagnostic and Statistical Manual of Mental Disorders, 5th Edition

**GLD:**        General Learning Difficulty

**GPL:**        General Public Licence

**ICD:**        International Statistical Classification of Diseases and Related Health Problems

# List of Acronyms used (continued)

**ICT:**        Information Communication Technology

**IM:**         Instant Messaging

**IT:**         Information Technology

**KBIT:**       Kaufman Brief Intelligence Test

**KTEA:**       Kaufman Test of Educational Achievement

**MR:**         Mental Retardation

**SLD:**        Specific Learning Difficulty

**SNS:**        Social Networking Sites

**SPLD:**       Specific Learning Difficulty

**TCH:**        TotalChoice Hosting

**UDL:**        Universal Design for Learning

**URL:**        Uniform Resource Locator

**WAIS:**       Wechsler Adult Intelligence Scale

**WISC:**       Wechsler Intelligence Scale for Children

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# Acknowledgements

Over the course of this research, a number of people have given their time and energy and support – it is the second least thing I can do to acknowledge that!

First, many thanks to Dr Peter Carew, for all of the advice, patience, support, patience, guidance, and a bit more patience for good measure. I couldn't have asked for a better supervisor.

I would like to offer my gratitude to Dr Larry Stapleton, for taking a chance on me and bringing me into the INSYTE fold, and to Dr Michael O'hÉigeartaigh, for listening to him and taking me on-board. Many thanks as well are due to the members of the INSYTE research group – John, Anita, Amy, Liam - all of whom offered their support, advice, and asked the awkward questions that sharpened the thesis further.

My kudos and considerations to Patt O'Keeffe, for both giving me the opportunity to work in this field of disability support, and then pushing me to learn and grow even more. The various school offices of Waterford Institute of Technology, each of whom was supportive, understanding, and willing to help at every contact and communiqué.

To my participants, without whom the entire endeavour would have been impossible – it was a delight and a pleasure and I am grateful for the chance you gave me.

To my supervisors, friends, and colleagues in Apple – especially Ger McCarthy and Laurence Hickey – all of whom gave their support, flexibility, and on occasion aid in time management.

Finally, a special thank you to my wife, my friends, and my family, for listening to me as I talked theory at them and in turn helped me through the slumps and peaks and troughs, your support was invaluable.

**Thank you one and all.**

# Abstract

## Student Jam: Investigating Online Learning Environments for Students with Specific Learning Difficulties

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Students with specific learning difficulties represent an increasing proportion of the academic community. While of normal or higher intelligence, their performance can be constrained by their extant conditions, leading to lowered performance. This can be due to and an exacerbator of the barriers, discrimination (perceived and actual), and socio-emotional factors which impact their academic, professional, and social engagement. Contextualised online environments offer a democratic means to potentially remove the barriers to learning and enable both performance and collaborative support. A framework and methodology were designed, with three thematic domains identified: Engagement, Interaction, and Motivation. A gated website and flat hierarchical community forum moderated by the primary researcher was developed to allow this population to interact, collaborate, and seek academic support as required.

Following a low level of participation in the pilot phase, the site was revised per participant feedback, while project advertisement and awareness development was refined. Incentivised participation was also incorporated. This did not lead to a significant increase in participation, engagement, or activity. While participant feedback was generally positive, the low participation levels may indicate a number of avenues which would require further investigation, particularly in regards to the motivational factors of the cohort. Critically, participants cited a lack of time to participate, particularly during high stress periods such as examinations. The low level of engagement and uptake in the population at large may also be due to lack of interest, low levels of project awareness, negative affectivity, or learned helplessness. Irrespective, protecting and enabling the socio-emotional well-being of the population should remain the top priority.

# Chapter One

# Introduction

In the political fantasy novel A Game of Thrones (Martin, 1996), we are told that you win or you die. The world of politics, royalty, and rivalries is presented on the surface almost like a meritocracy: You either succeed in some fashion, surviving in the process to continue playing, or fail and are subsequently removed from the game. While the events of the book and TV show may be more fatal than anything we would experience in the real world, the worlds of employment and of academia operates in a similar fashion: do well and continue, do poorly and you will be let go. As the story goes on, it becomes apparent that the game is rigged, with parties who had made efforts to succeed being undermined by structures, ploys, and motions put into place long before they had even arrived in the city of King's Landing from which they were expected to operate.

Of note then within the series is the emphasis given to and focus upon characters with disabilities. One of the principle characters, Tyrion Lannister, is a dwarf. Though intellectually staggering, he is physically limited in what he can achieve in a world where might makes right, and as someone physically disfigured he is rejected by a society which values aesthetic purity and presentation. Even when he succeeds in developing Kings Landing both economically and in defending it from hostile forces (Martin, 1999) he is reviled by the public for his appearance, while credit for his work is either assumed or

brushed aside by his political rivals. When celebrations are held for the survival of the city, he is literally hidden away during his recuperation from the battle. He is rendered invisible by his peers and his family for the sake of political expediency – no one wants the complication of a complex individual.

In contrast to this is Bran Stark. Bran, second in line for the heritage of Winterfell, a kingdom in the north of the continent, is paralysed early in the story (Martin, 1996). In contrast to Tyrion, who is rejected even by his own family, Bran is supported by his siblings and parents, although concern is raised as to his future and options of inheritance (to say nothing of his own ability to sire an heir). The king at this point of the tale even goes so far as to suggest that someone should euthanize the recently crippled child for the sake and suffering of all involved, not least of which the child (Martin, 2000). More critical then is Tyrion's position within the story. Due to the feudal nature of the society, factors such as horse-riding remain of import, something which Tyrion affects in two ways: first, the augmentations to a saddle design that would enable Bran to ride a horse even while paralysed; second, Tyrion's experience and empathy for the physical limitations that affected him from youth into adulthood and enable Bran to begin the emotional recovery as well as the efforts of physical rehabilitation. When Bran's older brother and father leave their lands for the requirements of the narrative, Bran is thus enabled to assume his position as next in line to inherit and is supported and trained to rule by his teachers, in spite of paraplegia.

While fictional in nature, the interaction between Bran and Tyrion relates directly to the core and the nature of the research addressed in this study. People with specific learning difficulties are inhibited by various factors, from imperceptible cognitive or perceptual issues, to the overt and obvious physical factors which impair or hinder their ability to learn at a rate they could otherwise expect. To oversimplify for the moment, in the case of the former it may be a slower or jumbled intake of information, while those in the latter category must work around or against structures which were designed with a normative population in mind, from the layout of a classroom to the shape of a building or pavement. To add to this, even while many people unhindered by circumstance may be sympathetic, there will be an experiential limit to their understanding of the emotional factors at play. Irrespective of how empathetic and imaginative a person is, the gap in truly understanding the experience of disability will be present unless they go through a similar event in their own lives, in much the same way that a man wouldn't have the direct experience of sexism that a woman goes through, or a Caucasian person in the perspective of racism directed towards and felt by an African-American (Oliver, 1992, in reference to Maguire, 1987, and Bourne, 1981 respectively). The context is key.

This isn't to say that sympathy and support cannot be given, but the person who does not directly experience these things remains an outsider. By contrast, someone who did share in such an incident (or incidents) has an innate understanding of the social and emotional experience and can more easily and naturally contextualise and relate this tacit shared knowledge to enable a sense of peer bonding and support that wouldn't be as easily

achieved by an outsider (Oliver, 1992, 2002). In theory, all then that is required is a medium through which this conversation-of-sorts can take place.

Due to the range and complexity of learning difficulties, it was traditionally a delicate and complex matter to create a space in which this interaction could occur: a physical space would require the allocation of a room or rooms, resources for learning and support, adaptations for access, monitoring of use, and should any of these not be available the creation or sourcing of same. All of this would also be before any additional requirements such as health and safety regulations and compliance, or indeed aspects such as distance learners, parties on placement, or health concerns for people who would avoid large groups of people for fear of infection.

It is of significant advantage then that the internet has emerged as such a robust and adaptable tool that can address each of these concerns: physical space ceases to be a concern when you can virtualise the learning environment; costly adaptations become much lower cost adjustments to the nature of the site; with no physical space, there are no health and safety concerns, as well as the removal of risk of infection or overcrowding. Better yet, the interactions can be archived and stored for later use as well. With such a range of options, personalisations, and customisations, an online learning environment offers the possibility of a democratic, open learning space where conditions can be effectively neutralized or overcome as appropriate. Better yet, in an age of smart phones,

laptops, tablets, and other such portable devices, no one need ever be far away from a supportive, learning environment again.

This research will look at the key factors involved in the development of a peer support network for third level students through information communication technology (ICT) and social media. Initially focusing on the background, context and justification of the subject matter, the work will go on to address the research questions, objectives, and framework which will shape the investigation. Following this, the ethical concerns and the methodology in regards to the case study will be stated, closing with an analysis of the findings and thereafter the final remarks and suggestions for further study.

## 1.1        Background

In third level education, students and technology can dovetail and yet remain obstinately parallel. Irrespective of their level of ability, student performance can and likely will at some point suffer problems in trying to learn or perform in an academic setting due to the impact of emotional and environmental stressors (Dyson and Renk, 2006). When said student has a Specific Learning Difficulty (SLD) in addition to the aforementioned pressures, that possibility becomes a distinct probability.

SLDs are 'a diverse group of conditions that cause significant difficulties in perceiving, processing and/or producing auditory, visual and/or spatial information' (Trinity College Dublin, 2010). Dependant on country, where it may also be referred to as an SPLD, SLD can also be taken to mean Specific Learning Disability or Disorder. An SLD is distinct from and separate to an intellectual or general learning difficulty: students with SLDs are of average or higher intelligence that are prevented from performing to the full extent of their capabilities by perceptual cognitive conditions outside of their control. The conditions cover a wide range of issues, most commonly Dyslexia, Attention Deficit Hyperactivity Disorder (ADHD) and the Autism Spectrum Disorders (ASD) (National Learning Network, 2010).

An SLD can be further explored from the perspective of being something which impacts on an ability to learn that goes beyond the cognitive: a person with an ongoing illness – any condition affecting health or mobility which is present and exists for at least 6 months (World Health Organisation, 2011) – or a lifelong condition such as a compromised immune system or Cystic Fibrosis may miss classes due to health concerns or infection, and could in turn require support. Severe emotional trauma and ongoing mental conditions may also fall under this banner, subject to discussion with and the approval of the relevant authorities. Overt physical disabilities such as paralysis, blindness, deafness, or loss of appendages, may also be considered learning difficulties since they in turn require adaptation to the learning environment, though this may not entail the same supports given to someone with a cognitive or perceptual issue.

In an information-heavy setting, students with SLDs are at a disadvantage academically, technically and professionally thanks to the increased cognitive workload generated by the impeded assimilation of information, processes, interactions and of requirements (cf. AHEAD, 2011). With the drive to create a knowledge-based economy and the growth of social media, these students are at risk yet again of being left further behind. With the increased emphasis on the use of information communication technology (ICT) and online learning at third level education, these students are at risk of over-saturation.

The impact of an SLD is not limited simply to a reduced capacity to perform academically: it can also impact on their socio-emotional domains, leading to isolation and alienation from their 'normative' peers. People living with SLDs tend to suffer from related stigma and a sense of difference, both self- and externally-generated (Higgins et al., 2002). Often carried from a young age and prior to entering third level education, this can affect the confidence and self-image of a student with an SLD, creating long-term repercussions that will affect them beyond their academic lifespan by continuing into their professional careers and adult lives, where supports will be fewer again, if present at all.

## 1.2        Context & Justification

Both historically and at present, the majority of SLD research focuses on primary and second-level education populations to the exclusion of adult and third level education populations. While it is understandable and indeed eminently sensible that interventions be developed for and initiated at as early an age as possible in order to minimise the longitudinal impact made by an SLD, this is of little benefit to the pre-existing population who are often diagnosed later in life and as a result are beyond the capacity of support these interventions can provide. With the increased emphasis on digital media literacy (cf. Johnson et al., 2011), and with their increased attendance at third level education (Toriano, 2003) this population is instead pushed into a bracket in critical need of prioritisation so as to not see them left behind both within the academic setting and afterwards in the professional job market.

The standard learning environment is typically designed with normative populations in mind, with adaptation rather than inclusion traditionally occurring at a later date for minority/fringe communities such as students with SLDs (Meyer and Rose, 2005).  In order for this population to receive a measure of balance, this trend needs to be reversed, with their needs and requirements placed at the nascent stage of system development rather than as an afterthought.

The issue of adaptation and inclusion in system and environmental development is a matter of import not simply due to any particular moral stance or agenda but by legal obligation:

these students are legally entitled to the same opportunities as any normative individual by dint of the Equality Act (Office of the Attorney General, 2004) and the National Development Plan (European Social Fund, 2006). If this population is to meet the demands placed on them by an increasingly information-dense learning or work environment, then the dismantling of barriers to their success must be addressed (Williams et al., 2007).

While supports do exist at third level education, they are most commonly operated on an individual level between student and tutor following a needs assessment. These tutors rarely, if ever, have an SLD themselves and lack as a result the aforementioned inherent contextual understanding of the condition. While this is necessary in order to help the student academically, it creates a scenario where the tutor is an outsider to the SLD community and limits their ability to aid the student on a deeper socio-emotional level in the same fashion as a peer from the effective in-group would be capable of doing. The development of a peer support network would then be the logical continuation of this train of thought, acting to complement existing supports and build a greater degree of in-group agency and self-advocacy by allowing their personal experience to be put to active use and shared contextual support – human reciprocity (Williams et al., 2007) and 'the social component of learning' (Browne, 2003) at work.

The social element in this issue should not be underplayed or ignored. Indeed, it is critical to address the often overlooked socio-emotional domains of the population (Department of Education and Science, 2001) as both indicators and contributors to student performance,

including but not limited to the self-esteem, emotional development and the relationships of the learner (Aspinwall and Taylor, 1992; Gerdes and Mallinckrodt, 1994).  Per White (2002), the divide of SLDs and these domains may often occur due to the emphasis placed on the medical model of disability, which tends to emphasise the positivist approach to the cost of unobservable phenomena, over the social model which holds to constructivist beliefs, in particular the artificial nature of disability. A key point of White's paper suggests both disciplines might benefit from considering the supposedly opposing contention. If the network is to follow a human-centred approach and take into account the necessity of the aforementioned socio-emotional domains, then the social model must not only be given credence, but made an active element of the framework and methodology. This is particularly relevant in regards to the fifth stage of Tuckman and Jensen's 5-stage theory of group formation (1977), 'adjourning'. Students enter third level education, pass through all the stages but often lack debriefing after completing their exams and before moving onto the next stage of their lives. By creating a peer-support network, the opportunity arises to both address this stage of their lives and also allow the student to be part of an in-group which can potentially carry forward afterwards.

With the recent determination of the Irish government to develop a knowledge-based economy (National Disability Strategy, 2009), third level institutions now bear a greater responsibility to the future of the economy than their previous, but by no means slight requirements. In recent years, there has also been a marked increase in the number of students with learning difficulties attending third level education (Toriano, 2003). This portion of the population can often fall behind, not for any lack of ability but rather are

hampered by a disorder of specific psychological processes and processing with a neurological or biological basis (Swanson, 2009). To remedy this, the principles of universal design should be considered – not to create, for example, a room to be used specifically by a student with dyslexia or an autism-spectrum difficulty, but a room which can be used by all students, irrespective of ability or limitation. In short, the removal of barriers.

The use of ICT and online learning environments is something which is practical from the basis of utilising a student's own familiarity with online social networks to support teaching and promote collaboration (Ramsay, 2012). While it is tempting to consider the development of social technology and Web 2.0 and 3.0 as some magical salve that will lift these students out of their problems and towards academic excellence, it must only come with objectives and end-goals which focus on and are designed around the needs and end-benefit of the student. The solution cannot be that of a futurist but a humanist. Any proposed solutions or potential end-products should be human-centered in their philosophy and their design. The medium in this instance cannot be the message.

## 1.3        Research Objectives

Following on from the needs indicated by the context and justification, the research that follows should look to engage with and promote the support and actualisation of students with SLDs and related non-traditional third level populations. While operating under an

initial auspice of support provision through social network sites, media, and ICT, it should look towards encouraging the potential of a self-emancipatory system of peer-support and – learning networks.

The objectives then of this research were to actively engage with and better understand the needs and disposition of the SLD population within third level education in Ireland. This investigation would then examine whether or how support mediated through online networks could accommodate their needs, and in turn promote in-group peer support and learning.

In order to realise these objectives, the following research questions were identified and posed:

**RQ1.** Can online learning networks enable the engagement of the SLD student population?

**RQ2.** In what way(s) can communication through online learning networks increase peer-based interaction within the SLD student population?

**RQ3.** Can online learning networks be utilised to support the socio-emotional domain needs of the SLD student population?

## 1.4          Contribution of Research

At the very outset, the research will allow a basis upon which to develop future frameworks and methodologies for the support of students with SLDs at third level education, in addition to similar and related lifelong learning programmes which seek to involve and integrate this population, whether professional or academic. With further development, it may also form the basis of PhD study and research, particularly as an option to explore more longitudinal observation periods to track the population and data.

There is also the potential to develop the academic performance, integration, retention, and resilience of the student population, though this may require a deeper level of study. The creation of reusable learning resources, actionable education frameworks, and independent learning strategies should also be seen as a benefit of the research, which in turn can be used in future research or indeed by other researchers rather than source and develop all material.

The initial findings of this research also formed the basis of conference papers, both of which can be found in the appendices.

## 1.5        Structure of Thesis

The thesis will be structured as follows:

### Chapter 2: Literature Review

First, the literature review will build up a body of information as regards to the current theory in regards to disabilities and supports. The main anticipated conditions will be defined, with additional information on how they would typically be supported in the third level setting.

### Chapter 3: Framework

Following this, the research objectives and the research framework will be outlined in chapter 3, looking at the structure of the project, the website, and the interactions within same.

## Chapter 4: Methodology

The methodology as applied will then be addressed in chapter 4, with the intended initial operations of the pilot phase and the potential subsequent methodological options for the main phase following participant feedback. Notable behaviours and functions in operation will also be discussed.

## Chapter 5: Findings

The findings section will follow this in chapter 5, outlining the feedback from both the pilot and main phase, before then analyzing and commenting upon said data.

## Chapter 6: Discussion and Conclusion

Finally, chapter 6 will offer discussion and conclusions in summary of the aforementioned findings and the dissertation overall. Potential avenues of future study and options to further develop the concepts discussed herein will also be presented.

## 1.6        Conclusion

Having outlined the key background features that motivate this research, as a moral, ethical, legal, and practical concern, we should now look towards developing a better understanding of the area in general, both in terms of the population and their respective

conditions and concerns and also that of the needs in developing a suitable action research

system.

# Chapter Two

# Literature Review

## 2.1        Introduction

To quickly reiterate, a Specific Learning Difficulty or SLD is 'a diverse group of conditions that cause significant difficulties in perceiving, processing and/or producing auditory, visual and/or spatial information.' (Trinity College Dublin, 2009)

An SLD is not an intellectual or general learning difficulty: students with SLDs are of average or higher intelligence that are prevented from performing to the full extent of their capabilities by perceptual conditions outside of their control  (American Psychiatric Association, 2010) where a general or intellectual learning disability refers to someone of lower than average intelligence.

The most critical issue at hand in regards to the treatment of SLDs is the dispute between medical and social models (White, 2002): the former focuses on rigid behaviourist principles for remediation, often at the cost of individual variation and unobservable phenomena (Baum, 1994); the latter takes the more flexible constructivist approach, but often tends to be overly critical of the biological model while misinterpreting its own conceit of disability as a social construct (White, 2002).

While studies have in the past looked at virtual or online learning, they are usually designed with normative students in mind rather than the minority populations, of which students with SLDs would be a portion. As a result, systems are not designed with these populations specifically in mind but rather have pre-existing systems adapted to them later. There is also the matter of the majority of research into and interventions for SLDs focusing on primary and secondary level education populations. While critical for the long-term development of SLD-related strategies (since early treatment can potentially limit an increase in problems), it is of little use to those who are diagnosed later in life.

The development of global-scale communication technologies has had a colossal impact on education and knowledge development (Bonastre et al., 2005), empowering significant proportions of the international community to interact with and share information, knowledge and media in a near instantaneous fashion at minimal cost. In the midst of this progress however, it is important to consider the risk of further divides emerging in social, experiential, and indeed opportunistic terms of the digital context for minority or marginalised populations. It is critical to engage with these communities, both on practical grounds - as cohorts which can contribute to the field - and ethical grounds - that they have the right and resultantly should have the opportunity to do so.

Building a stable basis upon which this population can develop is more likely to hold fast if the abstract structure and framework it is built upon remains sound, in pragmatic terms (as internal instability or affectation would potentially jeopardise efforts towards external

stability and longitudinal development) and philosophical (Carew et al., 2011). In order to follow this agenda, it is important to understand the barriers, biases, and additional factors which impact on these groups, both internal and external to the cohort, in order to effectively engage with them: self-view, socio-emotional domains, limitations, labelling, and 'differentness' (Higgins et al., 2002). This paper will look at the barriers and difficulties found in engaging with one such marginalised group: students with specific learning difficulties (SLDs).

The objectives of this literature review then are as follows:

- To define the primary SLDs and address the supports that they could typically expect in third level education, as well as:

    o Establishing the difference between normative and SLD students

    o Defining the nature of the SLD conditions, including

        ▪ Learning Disabilities

        ▪ Attention Deficit Hyperactivity Disorder

        ▪ Autism Spectrum Disorders

        ▪ Physical Disabilities and Chronic Illness

    o Outlining conditions that are commonly associated with this area and why they would not apply under these circumstances

- ▪ Mental Health and Illness

- ▪ General Learning Difficulties

- To define the needs and key concepts in regards to the study

    o The role of the normative researcher

    o Peer-based learning

    o The divide between the social and medical models

    o The motivational factors

    o Online behavior and social networking

    o The design needs

## 2.2        Defining the populations

There is some significant level of dispute into not just the parameters and diagnosis of what a Specific Learning Difficulty is, but whether or not they actually exist. They are not, for example, acknowledged in the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition, Text Revision (DSM-IV or DSM-IV-TR), although it should be noted that there is currently discussion to include them into the long-awaited Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-V). Their proposed definition is, however, somewhat lacking, stating a learning disability to be:

> *"A group of disorders characterized by difficulties in learning basic academic skills (currently or by history), that are not consistent with the person's chronological age, educational opportunities, or intellectual abilities. Basic academic skills refer to accurate and fluent reading, writing, and arithmetic.*
>
> *Multiple sources of information are to be used to assess learning, one of which must be an individually administered, culturally appropriate, and psychometrically sound standardized measure of academic achievement.*
>
> *Learning disabilities interfere with the acquisition and use of one or more of the following academic skills: oral language, reading, written language, mathematics. These disorders affect individuals who otherwise demonstrate at least average abilities essential for thinking or reasoning. As such, learning disabilities are distinct from intellectual disability."*
>
> (American Psychiatric Association, 2010)

This issue is also in part a result of the heavy misinterpretation of SLDs as a social construct: the misinterpretation being that as a social construct, they do not necessarily fall under the umbrella of biological, observable phenomena, when in fact there is significant neurological evidence for them (White, 2002). The error occurs in the failure to acknowledge that every disability is a social construct defined by society, whether it is the 'obvious', such as losing a limb or the ability to walk, or the less apparent, in this case the impaired perceptual input and output of an SLD. The concept of disability itself is the construct which defines the biological condition. It is the societal factor that defines and labels someone as being fully capable and or disabled, while the medical model acts as a gauge to diagnose and determine the scale and extent of the issue. This common ground is oftentimes ignored in favour of promoting a specific agenda in regards to SLDs.

This is not however to say that this element should (or even could) be removed. To remove the social element from consideration not only weakens the overall discussion, it removes a critical socio-ethical factor which needs to be addressed as part of the discourse.

What then falls under the purview of being an SLD? Operating on the basis that indicates the existence of SLDs then, we should first establish what they are for the purpose of this research, how they impact upon academic work, and how they would typically be supported at third level education.

### 2.2.1          Normative vs. Disabilities

In order to fully understand and appreciate the nuance of a person with one or more SLDs, it is important to acknowledge the baseline for comparison: the 'normative' student. In this case, it is a person who is of average intelligence who does not have any perceptual, cognitive, or intellectual issues in regards to their academic, professional, or social lives.

Typically, intelligence is measured by intelligence quotient (IQ). While this is a commonly accepted, if controversial, concept, it does bear looking at, both to establish a baseline to operate from so that a firm understanding of the intellectual and cognitive differences between the groupings can be acknowledged before going forward. IG is calculated upon a mean axis, with a score of 100 being the mean or average point for the overall population.

Typically a standard deviation from this point is allotted 15 IQ points (Kaufmann, 2009), so 'normal' or average intelligence would be within the range of 85 to 115. This distribution can be seen more clearly in Figure 2.1, which is itself based on Kaufmann's data.
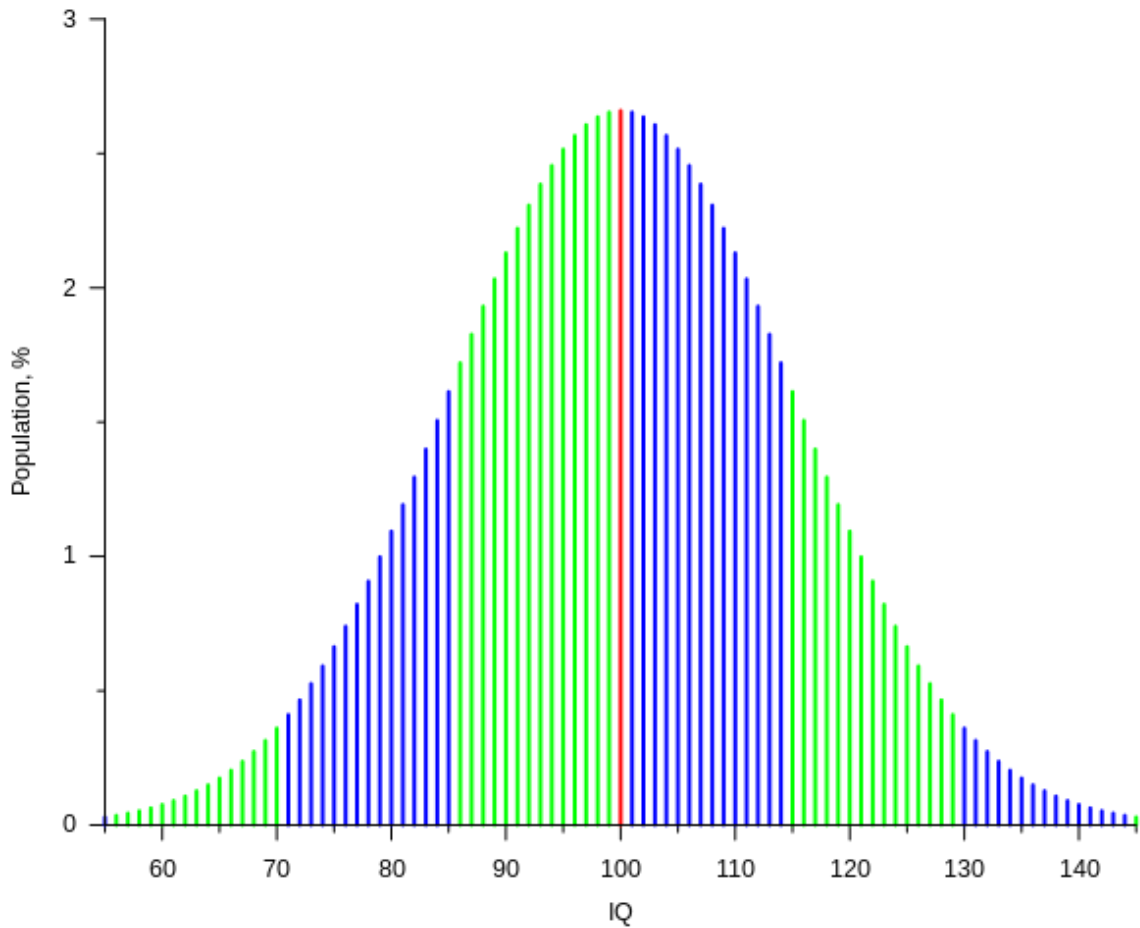


**Figure 2.1        IQ Distribution Curve (Damato and Ryazanov, 2012)**

As a point of comparison, people with specific learning difficulties, being of at least average intelligence would equal the normative population in this regard. It is their condition which prevents them from meeting their full potential. For parties with a general

learning difficulty, their intelligence would be outside of the standard deviation range from the average level of intelligence, thus preventing them from operating on the same intellectual and performance level. While providing an academic support may assist them, it wouldn't enable them to achieve the levels possible by either the normative or SLD. An academic support would in fact require an entirely different syllabus or approach which couldn't itself be applied to this study without significant training of the primary researcher and a reshaping of the project to match.

Among the most commonly acknowledged IQ tests are the Wechsler Adult Intelligence Scale (WAIS), the Kaufman Brief Intelligence Test (KBIT), and Kaufman Test of Educational Achievement (KTEA). The WAIS is currently on its 4th iteration since 2008, the KBIT on its second since 2004. WAIS-IV is also preferred for needs assessment in third level education due to it due it being designed for and weighted towards adult IQ performance and the bearing on literacy as a gauge for reasonable accommodation, in keeping with the majority population being over 18 years of age in third level (Student Life & Learning, 2012). Students can also present evidence based on the Wechsler Intelligence Scale for Children (WISC) test should it be less than five years old (the statute of limitations for such evidence at present). The four key areas which need to be assessed in this regard are:

- Verbal Comprehension

- Perceptual Reasoning

- Working Memory

- Processing Speed.

Results are given in percentiles for use by the person (usually a Disability Officer) carrying out the follow-up Needs Assessment in the third level institution for reasonable accommodation (Ibid.) These accommodations range dependent on the student and their barriers of performance, from an allotment of tutor hours for generic skills support to assistive technology or exam supports such as additional time in examinations and waivers on spelling and grammar at the discretion of, the Disability Officer.

### 2.2.2        Learning Disabilities

Per the Report of the Special Education Review Committee (SERC) (1993), a learning disability is an 'impairment in specific aspects of reading, writing and arithmetical notation, the primary cause of which is not attributable to assessed ability being below the average range, to defective sight or hearing, emotional factors, a physical condition or to any extrinsic adverse circumstances'. Typically, this would tend to cover (but not be limited to) Dyslexia, Dycalculia, and Dysgraphia. Dyslexia affects the ability to learn in regards to fluency and comprehension in reading (National Institute of Neurological Disorders and Stroke, 2010); Dyscalculia impairs the processing of mathematical or arithmetic information (Butterworth, 2010); while Dysgraphia impinges upon handwriting and coherence of same (Chivers, 1991).

These conditions are typically diagnosed through consultation and assessment with a qualified psychologist or relevant medical specialist – in order to qualify for third level academic support, this is in fact a requirement (Trinity College Dublin, 2011). IQ-Achievement discrepancy is among the options for this, since it would indicate a disparity between the person's intellectual capability and actual performance, though it is one of many options for assessment (in part as it has more recently come under criticism for discrepancies in the indicators between IQ and performance, per Barnes, Fletcher, and Fuchs (2007) and Harrison and Flanagan (2005). It's also important to note the visual nature of this spectrum, in that cognition conflicts with the visual input of information.

### 2.2.3 Attention Deficit Hyperactivity Disorder (ADHD)

Attention deficit-hyperactivity disorder (ADHD) is, strictly speaking, not a learning difficulty as such but rather a mental (Bray and Kehle, 2011) and neurobehavioural (National Institute of Neurological Disorders and Stroke, 2011) disorder defined by significant inattentiveness or hyperactivity and or impulsiveness (or indeed a combination of the factors). This is broken down into three subsets by the DSM-IV:

- Predominantly inattentive (ADHD-PI or ADHD-I)

  o This iteration was often referred to as attention deficit disorder (ADD), but this description has since fallen out of active use

- Predominantly hyperactive-impulsive (ADHD-HI or ADHD-H)

- The two combined (ADHD-C).

Typically, ADHD in all its variants would be managed through a mixture of medication, counseling, and behavior therapy. An inability to focus attention and impulse control would not typically be conducive to learning environments, and as such students with ADHD may contact groups such as the disability office in order to seek additional supports, such as additional tuition or extra time in exams, due to the chronic nature of their condition.

### 2.2.4        General Learning Difficulties

People with general learning difficulties, referred in some cases as intellectual disabilities, would be those with an IQ below 70, placing them into the category of mental retardation (often shorthanded as MR). While they may also have a cognitive impairment, they would not be categorized as having a learning difficulty as their ability to process or learn information is impacted on primarily by their lower intelligence. This would typically be evident from symptoms such as a delay in the development of oral language development or adaptive behaviours like self-help, difficulty in problem solving, and a lack of social inhibition (Daily, Ardinger, and Holmes, 2000). Table 2.1 can be taken as a gauge of the severity of general learning difficulty.

| CLASS | IQ |
|---|---|
| Borderline intellectual functioning | 70–84 |
| Mild mental retardation | 50–69 |
| Moderate mental retardation | 35–49 |
| Severe mental retardation | 20–34 |
| Profound mental retardation | Below 20 |

**Table 2.1          IQ Range of General Learning Difficulties (adapted from the DSM-IV, 2000)**

For this group, the key issue is an intellectual inability to learn beyond a particular intellectual level, rather than a cognitive or perceptual factor which hinders an otherwise intact ability to take in and comprehend information.

### 2.2.5          Autism Spectrum Disorders

The autism spectrum or autistic spectrum disorders (ASD) cover a range of conditions classed as pervasive developmental or neurodevelopmental disorders, the most common of which would be, though it is not limited to, autism and Aspergers Syndrome (Johnson and Myers 2007). The symptoms of ASDs are typically indicated by issues and problems with social interaction and functioning, including less responsiveness to social stimuli and lower understanding of social cues (Volkmar et al., 2005; Volkmar and Chawarska, 2008), communication and sense-making (Williams et al., 2006). They also tend to maintain a

limited and repetitive or ritualistic set of behaviours and interests (Lam and Aman, 2007). These symptoms and indicators of the conditions tend to become apparent from early childhood.

Autism spectrum disorders and Aspergers Syndrome tend to be aligned, and even confused due to the similarity of their conditions, particularly in regards to the individuals (in)ability another person's feelings, emotions, and thoughts...' as well as 'social intuition... obligation... and conscience.' (National Learning Network, 2010) There are however key differences to consider. People with Aspergers Syndrome differ from those with autism primarily by the lack of delay or deviance in early language development (American Psychiatric Association, 2000) – autism by contrast requires impaired communication for diagnosis. Autism tends to be considered a spectrum due to the wide range of expressions it can cover, from

> '*the child with severe impairments who may be silent , aloof, of low IQ and locked into rocking and hand flapping, to the high functioning individual with pedantic and verbose communication, an active but odd social approach, and rarefied special interests...'*

> (Happé, 1999).

### 2.2.6          **Mental Health & Illness**

Mental Health is used as a blanket category in third level institutions for any extant conditions relating to mental health, illness, disorder of a student. The general area of mental illness and disorder covers a vast swathe of conditions, including anxiety, mood, psychosis, personality, impulse control and addiction (United States Department of Health and Human Services, 1999; WebMD, 2005).

Diagnosis, management, and treatment will vary depending on the condition itself. While initial signs and symptoms may be noticed by a general practitioner, a qualified psychologist or psychiatrist would be required to make an official diagnosis. These diagnoses will typically be in tandem with the fuzzy prototypes outlined in the Diagnostic and Statistical Manual of Mental Disorders IV (DSM-IV) and the International Statistical Classification of Diseases and Related Health Problems (ICD), the former by the American Psychiatric Association, while the latter is published by the World Health Organization. Management and treatment will also be defined and described by these professionals, with the option of counseling, psychotherapy, and medication all being potential options for support.

### 2.2.7          Physical Disabilities and Chronic Illness

A physical disability or impairment is a broad spectrum of disabilities 'which include orthopedic, neuromuscular cardiovascular, and pulmonary disorders.' (California State University, Northridge, n.d.) People with these conditions may require the use of 'assertive devices such as wheelchairs, crutches, canes and artificial limbs' for mobility. The source of these conditions may be through congenital origins or indeed from injury and trauma (or related chronic conditions). Visual impairment and auditory impairment – any limitation to sight or hearing such as blindness, deafness, and hearing impairment – can fall under this classification and sensory disabilities. Chronic conditions may themselves be a co-morbidity of these states.

A Chronic Illness, disease, or condition, are 'diseases of long duration and generally slow progression.' (World Health Organisation, 2011). They are persistent and long lasting in their effect(s). While potentially communicable, the majority of conditions that would fall under this categorisation in academia would be non-communicable - they are lasting conditions but non-infectious. Examples of these conditions most common to third level education would include autoimmune diseases (such as Crohn's), cardiovascular and cerebrovascular diseases, encephalitis, cerebral palsy, and epilepsy.

**2.2.8          Implications for this research**

For the purpose of this research, and based off the common practice of third level institutes, the term SLD acts as a catchment for what would commonly be referred to as learning disorders, ADHD, the Autism Spectrum, and physical disabilities. Excluded from this grouping would be general learning difficulties, mental health, and normative students.

The traditional learning disability population – dyslexia, dyscalculia, and dysgraphia – would certainly fall under this purview, being the most commonplace issues and the concept defining group. It's important to note that due to the visual nature of the condition, careful consideration needs to be given to the design and structure of any intervention developed.

Potentially, the ADHD cohort could benefit from the use of the online environment due to the relative freedom allowed by the structure. The capacity to post whenever they like removes issues surrounding impulse control, for example, while the virtual environment means that other participants would not be disrupted as a result. It would at least be worthwhile leaving the option open as a result to gauge interest at the least.

The key factor in assisting people with ASDs is management of the condition, typically through education intervention and medication (Myers and Johnson, 2007). As the latter would not apply in this study, the former would at least be an option for any potential

participants. The online structure may in fact be more suitable for interaction since there would be fewer social cues and indicators (such as eye contact or facial expressions and body language) to parse for the participant.

The GLD population, while a potential for later integration into a similar study, would be excluded at this juncture for a number of reasons:

- As the basis of the project is to enable students with SLDs to perform at their expected normative level, this group may not benefit from the presence.

    o The main cohort may also expend more time and attention than would be appropriate to supporting a student with a general learning difficulty.

- While access to third level education can be possible for this cohort, they would not be common in standard third level classes – the population sample as a result would likely be too small.

- Social and communication skill issues are also a noted issue for the GLD cohort

    o Their ability to interact with other participants could potentially be problematic and upsetting.

    o As Student Jam is designed as a social tool as much as an academic one, there may be a risk of affecting the site overall.

- Due to their lower IQ, they wouldn't be able to act as a peer support quite as readily as the rest of the base population for this study

o   While it may certainly be possible to groom them for the role, it would take a far greater amount of time to do so, and the online environment would not be conducive to supporting them in this.

Mental illness is considered one of 'the most burdensome of all classes of disease because of their high prevalence and chronicity, early age of onset, and resulting serious impairment…' (WHO International Consortium in Psychiatric Epidemiology, 2000). Due to the extremely sensitive nature of their conditions, the need for adequate psychological support, and the lack of clinical training held by the primary researcher in that regard, students with mental health were exempted from the study as a matter of appropriate duty of care. Typically, a student with these conditions would receive support from a qualified party within the support system rather than a traditional learning support tutor, and a similar process should be applied here. It may however be more suitable to engage them in such work at a PhD level and in concert with an appropriate educational or clinical psychologist, both to ensure the best care and support can be delivered and to ensure the appropriate ethical clearance and operations would be present.

While not in and of themselves SLDs (since the cognitive aspect is not necessarily at issue) Physical Disabilities and Chronic Illness can fall under this purview in academic circles for a number of reasons. Dependant on the nature and extremity of the condition, the party in question may miss time from class due to their condition leading to a disparity in the performance versus their expected levels, or indeed require assistance in regards to

coursework, and mobility. Supports may be provided from a moral and ethical stance, as well as for compliance with equality legislation as the impacting factors are beyond the control of the student. Certified medical evidence outlining the condition, needs, and requirements of the student would typically be required in order to qualify for this, much in the same fashion as an educational psychologists' report for traditional SLDs.

Due to the lack of physical location and time constraints for use, an online support service or environment would be an ideal venue for participants with these conditions. As they would be intellectually normative, there would be no negative impact for other participants to have them participate; their potentially visible disability may also work in contrast to those living with hidden conditions; an online structure of the service also insures a decreased likelihood of infection, while also enabling them to work to their own schedule whether able to attend the campus or not. Due to the recurring cognitive nature of many of the conditions – and indeed the potential co-morbidity of memory issues – efforts should be given towards making allowance for this and developing a continuity of style and ease of use to reduce cognitive workloads.

## 2.3        Defining the Needs

Having looked at the population and the conditions that would fall under the remit of the study, it next becomes relevant to consider the issue of how to support them adequately within the study. As previously stated, the end goal would be to develop a system which

would first enable the participants to gain support. Through this support, the population could then begin to take a greater degree of control over their learning and, in doing so, then act as an academically and emotionally contextualised peer-based support for their fellow participants.  In order to do this, certain key factors must be addressed:

- The role of the non-disabled researcher

- The nature and benefits of peer-based learning

- The socio-emotional versus the medical and the biological

- What motivational considerations will need to be addressed?

- Online behavior and social networking

- The design needs for the population

### 2.3.1          The role of the non-disabled researcher

Typically, the primary researcher would be normative or non-disabled, though this factor may often go unacknowledged or even hidden (Walmsley, 2004). This brings into account a potential conflict of interest, particularly in regard to Oliver (1992, 2002) who sees this as both potentially alienating and oppressive. Barnes (1996) continues this discussion, indicating a more partisan expression: that a researcher is on the side of those with disabilities or is one of the oppressors, the method or tool of oppression being the research itself. This act may be unintentional, but the concern remains, particularly given the

potential to pursue the work for the benefit of other academics and researchers rather than for or to the advantage of the research subjects themselves (ibid).

Kiernan (1999) suggests a practical factor that can at times necessitate the presence and role of a non-disabled researcher: the heavy reliance on intellectual skills in research reduces the accessibility of same to people with cognitive or learning impairments. In this he suggests the role of support is important in order to promote inclusive research. Nevertheless, there is an innate arrogance in trying to emancipate "others" (Kincheloe and McLaren, 2000). The disclosure of non-disability may also be an issue due to the reactivity effect – that by the very act of knowing they are being observed by a de facto outsider a participant will change or alter their behaviour (Heppner et al., 2008).

Any support given from a nondisabled researcher should therefore seek to provide the population with the accessible means to, wherever possible, emancipate themselves. Engagement and research on any level, however well-meant, cannot be forced without the risk of exacerbating the attributional factors which lead to disenfranchisement. Instead, an open and patient user-led dialogic process which invites participant feedback is necessary, preferably with a significant time frame apportioned to take feelings of stigma, hesitancy, vulnerability, and well-being into account.

### 2.3.2        **Peer-based learning**

The position of people with SLDs as active participants within inclusive research is by no means new. Per Walmsley (2001, 2004), they have an active role to play in both the participatory and emancipatory research (Oliver, 1992, 2002). For Oliver, their participation is essential socially and politically, since he holds the view that disability research has little or no effect upon policy and policy makers, and consequently it is not only of little benefit to the population but also potentially (if not determinedly) alienating. This is to say nothing of the bias that a researcher may bring to bear in terms of deciding upon what is covered in the research (ibid), particularly in the capacity to 'accurately capture and reflect the experience of disability from the perspective of disabled people themselves.'

By contrast, and in citing Atkinson and Walmsley (1999), Black and Roberts (2009) acknowledge the position of people with learning difficulties as 'experts within their own support needs'. A dyslexic person understands at a much deeper, experiential level, what it means to be dyslexic; a person who has mobility issues understand the fuller emotional extent of someone else with mobility issues… This insight gives them a potential advantage over a traditional or normative support were they to engage as trainers or supporters themselves (Weeks, Shane, MacDonald, Hart, and Smith, 2006) as they can bring this capacity to bear over both the education and the context in a far more nuanced, supportive and suitable fashion.

Boud et al. (ed. 2001) state that within 'any educational setting learners naturally engage in informal peer learning to make sense of their course, test their ideas and share their concerns.' Their work goes on to discuss the importance of understanding promoting, and encouraging the development of an 'explicit reciprocal peer learning' as a means to further enhance the educational experience and uptake. Peer-based learning also has the advantage of better using available assets, particularly as class or learning group sizes increase without a commensurate increase in resources (Wilson, 2001). For Eisen (2001), peer-based learning brings a significant advantage in how it generates discussion and promotes a 'deeper reflection because it fosters contrasting perspectives…' Indeed, the social constructivist perspective of collaborative elaboration (Van Meter & Stevens, 2000) is suggested to result in learners building understanding as a group that that would not be possible individually (Greeno et al., 1996)

### 2.3.3        Socio-emotional factors versus the medical and biological

The inherent nature of SLDs and disabilities is typically broken into two camps: the medical view, which favours behaviourist theory and a focus on observable behaviours and origins at an organic basis, at the rejection of subjective or theoretical experiences within the mind (Baum, 1994); and the socio-emotional factors of constructivist theory, which in coming from a background of cognitive psychology focuses on the experiential, emphasising the ways in which knowledge is created in order to adapt to the world. The socio-emotional factors and subjectivity take on significantly more meaning as a result.

Key to the idea of constructivism is that knowledge is implicitly social in nature and origin. White (2002) states that irrespective of the views and philosophy held, it is critical to recognise that SLDs, and indeed disability in general, are a social construct. That they receive the label and definition of being a disability is a socially-defined and applied parameter. This concept tends to create some confusion which is worth clarifying: that disability as a social construct does not contradict the physiological, biological, or genetic basis which causes an SLD to occur. Rather the nature of disability as a social construct operates in the same way as gender, race, or sexuality: these are identifiers of extant exemplars – a person may be male or female, Asian or European, straight or gay... The social construct acts as a complementary descriptor for each, rather than a contradiction of nature.

From a practical perspective, allowing room for the two concepts is essential. The medical model enables clear and distinct lines for both diagnosis of and evidence for SLDs. This in turn establishes lines of what is necessary to support the actual condition itself, much like a visit to the doctor prescribing medication for an illness. Where this model falls down however is in the experiential aspect that follows, the side effects of the illness and the medication, if you will. Taking medication may target the cause of the issue, but it does nothing to address the consequences such as the emotional state and experience of the person who takes it. Richardson (1996) defines the difference between the two camps nicely in how it can apply to students: in the behaviourist tradition 'teacher transmits knowledge' while in the constructivist tradition the 'teacher mediates ideas, constructs meaning and knowledge, and acts upon them.' In the classical education sense, the former

can apply readily; with a perceptual or cognitive impairment hindering the direct transmission, the mediation becomes an important application to ensure understanding (albeit one which would not be possible without the knowledge in the first place.)

### 2.3.4        Motivation and Passivity

While it is logical to address the direct cause and subsequent effects of SLDs, they are not in and of themselves the only factors which should be considered. Key to socio-emotional state and engagement of participants is that of the intrinsic motivation. While a support or service or award (such as the degree at the end of an academic programme) may provide the extrinsic (or external) stimulus, this does not necessarily correlate with the intrinsic desire or state (Adelman, 1978). Ryan and Deci (2000) detail in fact how extrinsic motivation can be pursued while quite at odds with the internal state, albeit potentially begrudgingly. Intrinsic motivation is motivation based around personal enjoyment, fulfillment, or a feeling of competency and self-worth that is internal to the person and removed from external reward or validation – self-determination, in many respects (Harter, 1981, Ryan and Deci, 2000). Should this intrinsic motivation be undermined – for example by a constant sense of difference, of stigma, or indeed of (constant) marginalisation then the active pursuit of self-worth may be limited to (if not transformed into) demotivation, passivity, negative affectivity, or learned helplessness. The implication of this requires not just a shift in methodology, but in theoretical consideration as well. As participant

motivation becomes a factor under review, it is important to consider the source and implications this may hold for the group.

Hall (2004) discusses the impact of hidden 'social geographies' faced by people with learning difficulties, both in practical terms, such as fewer opportunities for employment, housing, education, and 'the embedded sense of mental difference', due to 'discrimination, abjection, abuse, poorer health and a lack of control over the key decisions that affect their lives.' The issue is in part at least related to the social stratification of sorts discussed by Jenkins (1991) where he points to the exclusion and low political visibility borne by people with disabilities: by the nature and function of their impairment, they are shifted into a separate social class and economy to that of the majority and 'patterned inequality.' With even the subconscious perception of this as and within the field of interaction, passivity in what mainstream engagement is provided for the population is almost inevitable since any connection with it is lessened. Over a long enough period of time, the impact of demotivation or disempowerment may also result in negative affectivity (NA). This refers to the stable tendency to experience negative emotions over a long period of time irrespective of the situation or of the circumstances (Watson and Clark, 1984). An individual with a disposition towards NA is also more likely to maintain an attention bias toward adverse stimuli or potentially threatening situations (Watson and Pennebaker, 1989). Even when there is an established efficacy for activation through intervention (Graverson and van Ours, 2008), the issue of the efficacy such interventions and programs have been raised (Fougère et al., 2009): can such systems go against the

intention and impact negatively on the potential participants, who in many cases have gone through similar projects in the past?

Snowden (2004) cites the 'banking system of education' as another significant source of apathy and disempowerment. Within this concept, lecturers act as the bankers who provide the capital (in this case knowledge) to students, who in turn transact this knowledge for assessment without fostering 'their critical engagement or intellectual development.' Rather than being the engines driving their education, they are a passenger getting a lift – the knowledge is not cultivated or retained for later use and synthesis but is instead spent in the one-off requirement of a module or exam. Instead of being active lifelong learning agents, the student becomes a passive repeater whose body of knowledge at any given point is shaped by modularisation rather than intellectual development or critical investment.

Learned Helplessness meanwhile exists as an extreme endpoint of the passive mode. Per Seligman et al. (1971, 1975), it occurs when a person has learned from prior negative experience (typically from uncontrollable events) to act or behave in a non-responsive fashion even when it is within their power to affect the situation. This situation develops three deficits within the affected of the negative experience: motivational, cognitive, and emotional (Abramson et al., 1978). These deficits act as results and reinforcements of the contemporaneous and subsequent uncontrollable situations through causal attribution which will determine the parameters of helplessness deficits generality and chronicity, in turn affecting the subject's self-esteem (ibid).

How then do you best engage with a passive or demotivated population? Avis (2000) indicates the contrast between the social and business models of education, advocating a dialogic process over the managerial. He goes on to indict the latter as stifling creative and critical engagement, but offers little in terms of addressing the absence of interaction himself. Snowden (2004) iterates the use of a (preferably goal-based) learning community, but the paper in effect assumes that the group is already gathered, rather than being assembled over time. Even with the group assembled, she notes the internal resistance of the group to the stated goals. Accepting this internal conflict as an inevitability may well be a practical exercise, with the greater emphasis being placed on avoiding a 'One-size-fits-all' model. While her paper was primarily concerned with the integration of ethno-cultural diversity, the socio-cultural factors and condition-variance of multiple SLDs brought together to form an education community would share complexity of operation.

Firth et al. (2008) focused upon the nature of agency and emphasised the need for at least perceived personal control over external situations to empower students with SLDs. The key drawback of their intervention is that it should be initiated earlier rather than later so as to minimise the experience of failure: the more prolonged the delay in developing these coping strategies, the harder it will be to undo the effects (which itself connects to the nature of this research overall as a late-stage support structure).

For Abramson et al. (1978) however, the issue and proposed solution is much more complex: based around the attributional function of learned helplessness, they effectively

sue for positive reinforcement through controlled expectations, a more nuanced approach to the probability of outcomes, and a more dynamic association of excessive failure with external forces and unrealistic success with more achievable internal response. While a gross over-simplification of what is a complex psychological process, this remains a solution which can only be addressed by the participant, rather than enforced by the researcher.

### 2.3.5        Online Behaviour and Social Networking

Social networking, even before the advent of popular online spaces, has been a factor of no small import for any population. Haring and Breen (1992) noted that parents, teachers and the students with disabilities themselves all advocated for interventions that would go beyond skill training and provide support for participation in integrated social support environments. While it was a low population case study, the results of their social network intervention increased the quantity and the quality of the participant interactions.

Barker (2009, 2012) noted the use of social networking sites as an effective means of peer-group communication, particularly as a means of ameliorating issues of self-esteem, social compensation, and also the factor of social gratification. There is an internal motivational benefit towards using such online environments, though this is based in part on the peer group in question – if an in-group is not a part of a system, then the potential participant is

less likely to receive utility or benefit of use. Verhagen et al. (2012) and Barnes (2011) note that both extrinsic and intrinsic motivations are major determinants to behaviour and usage of online environments (in this case, perceived usefulness and ease of use for the former motivation, novelty and an appreciation for the activity itself in the latter). Barnes also suggests that the internal motivation is critical for 'habit and continuance intention.'

Continuing on from this, Chang and Hsiao (2013) noted that users have different behaviours dependent on their level of social network site use. Key among their findings was that heavy users would tend towards a greater willingness to share information with other users. Holmes and O'Loughlin (2012) corroborated this to some extent, noting how social networking sites offered new ways to explore personal identities, particularly for their learning disabled population. Howard and Magee (2013) also looked at the nature of online group identity, though they acknowledged that the key issue in regards to online group analysis is validity of measuring the online group.

There are key ethical issues to consider in this field. Privacy is a recurring issue, as is that of online safety (Holmes and O'Loughlin, 2012). This thinking is not uncommon due to the notable and high profile concerns raised in relation to major social networking sites such as Facebook over privacy, (Electronic Frontier Foundation, 2010; USA Today, 2009; Gannes, 2011 ), information ownership issues (Facebook Privacy Policy, 2010) and security (Hoffman, 2007). Lin and Liu (2012) also noted that while concerns of privacy

could arise in regards to such websites, there was also an increased sense (if not state) of trust and positive motivation at work.

From the perspective of the participant, the point of engagement should be separate from what exists and is used, such as Facebook and Twitter, due to what Ramsay (2012) refers to as the closed space – an area the participant treats as distinct from their academic and professional lives (which should be 'entered into "by invitation only," it at all.') To that end then, it's important to look at what would be necessary in creating this space rather than exploiting an extant system.

### 2.3.6        Design Needs

In order to allow for the wide range of SLDs and significant variance of symptoms therein that could be encountered within this, or indeed any subsequent study, a Universal Design for Learning (UDL) approach needs to be considered (Meyer and Rose, 2005). With the significant growth of ICT in recent years, advances in Assistive Technology (AT) have been significant. AT is 'any item, piece of equipment or product system that is used to improve functional capabilities of individuals with disabilities' (NCTE, 2011). Used in conjunction with UDL theory, these advances can enable and empower the SLD population to master the ICT necessary for the changing job market and economy.

Following on from that in graphic design terms, the 7 Principles of Universal Design (Center for Universal Design at North Carolina State University, 1997) indicates an effective strategy for website design. CANnect (2011), though primarily concerned with visually impaired users, interpreted the application of these design principles to cover the greater range of considerations for disability and SLD support, in turn corroborated by Lembree (2011):

- Equitable Use

  o That the layout and interface is usable by anyone, whether the user has limited motor functions necessitating a single control, that navigation via screen reader or magnification is possible, or indeed the use of text-to-speech software.

- Flexibility in Use

  o In this, the user should not need to be 'perfectly precise,' that they can work at their own pace and ability, and that they should be able to use any specialized devices they need to access the content.

- Simple and Intuitive

  o The system should be consistent in design and easy to use in order to allow a less stressful and easier to comprehend experience.

- Perceptible Information

- o This principle requires multiple modes of information presentation as well as suitable design elements (such as contrast, spacing, and the logical separation of elements on-screen) to account for the array of potential viewer conditions.

- Tolerance for Error

  - o For this, room to make and redress errors must be present, particularly to allow for users who may be prone to make mistakes or accidental and unintentional site interaction.

- Low physical Effort

  - o The use of the site is not tiring, exhaustive, or difficult – wherever possible, common shortcuts should also be applied and enabled.

- Size & Space for Approach and Use

  - o This final principle requires the appropriate spacing and target area for controls of the site – small or tightly grouped buttons and fly-out menus would be problematic for users with limited mobility or low visual capacity, for example.

There are additional features which should be considered – the avoidance of white backgrounds within the site as they can too bright and dazzling (British Dyslexia Association, n.d.), for example. Hobo Web Design concurred significantly with the British

Dyslexia Association in terms of key design advice, including a recommendation for plain, evenly spaced sans serif fonts, preferably in 12-14 point size, though text scaling if possible would be advantageous from a customisation perspective . The use of green, red, and pink should also be limited in case of colour-blind-individuals (ibid). Clear graphics and distortion free text should also be employed so as to better enable the use of screen reader software (Dyslexia.com, 2011).

In terms of copy structure, the British Dyslexia Association (n.d.) also emphasise the use of left-justified text with ragged right edge. In-text lines should also not be too long, preferably 60 to 70 characters across. Spacing is also important: the use of long, dense paragraphs and cramped material should be avoided (with the option of line spacing adjusted to 1.5 or double as a way around this.)

### 2.3.7        Implications for this research

As a matter of both transparency and ethical function, the position and reality of a non-disabled or normative researcher is a factor that needs to be stated, both in documentation and to the participants themselves. While stating otherwise might enable a speedier embedding with the cohort, it is an inherently unethical, potentially oppressive act, per section 2.3.1, to say nothing of how this would skew and impact upon legitimate findings. As a result, it should be noted at the outset that this research is ethnographic in nature due to the normative or nondisabled nature of the primary researcher.

In the instance of demotivation, passivity, negative affectivity, or learned helplessness occurring within an ongoing research project, it is important to determine the specificity of the internal non-reaction, per section 2.3.4. Is the negative affectivity in relation to the online environment or academic environments in general? Is it specific experiential factors at work – in this instance, ICT – or general experience from 15+ years within the education system? A further consideration is of whether this is a localised or representative issue: if in testing the system with other locations would a similar (non-)response likely to occur, or is it a locational effect? Would it for example be rooted in the higher rural catchment of the initial testing ground, and an observable difference would be immediate from an urban-majority populace? Observing for evidence, flags, or indicators of these factors should at least be considered on an individual level of low participation, if not for the project overall.

As suggested in section 2.3.6, from the perspective of research and investigation and indeed for participation, the development of an online network separate to what already exists both academically and socially would be the most preferable option to pursue. For the researcher, this is due both to the necessity of data protection under Irish and international legislation and the ability to track, host, and observe operations in a secure fashion, while for the participant it avoids invading a non-academic or recreational space. The utilisation of a universal design does not however demand a sterile homogenisation of the entire work. A more effective and practical view of this would be that features of an online environment for mediating support should cater to support particular conditions by necessity, and these modifications should be enabled in such a way that they can also be of use and utility to the population as a whole from a perspective of choice or comfort – text scaling or colour

adjustment would be essential for Participant 1, but these modifications can either be ignored, used, or appreciated by Participant 2 as they please.

Ultimately, in order to address the socio-emotional domains as suggested in section 2.3.3, the social/constructivist model of SLDs should be incorporated in addition to, rather than at the cost to or challenge of the medical/behaviourist factors (White, 2002) which themselves enable the baseline strategies. Ertmer and Newby (1993) in fact sue for an understanding and intertwining of all concepts by expressing them all in how they can apply to students in various capacities, subject to the context of the situation.

### 2.4      Conclusion

This chapter has given a broad overview, both of the range of conditions which fall under the umbrella term of SLD and also the related condition which might require an alternate means of support (or adaptation of same). The necessary factors in terms of developing an action research strategy were also acknowledged through the means assessment of sorts via the role of the research, needs, motivational and behavioural considerations.

SLDs vary greatly in terms of their symptoms and effects. Consequently, a broad consideration of supports needs to be maintained. Conversely, a one-size-fits-all approach – both in the role of the researcher and the development of an intervention strategy – would

also be disastrous, since that would spread the macro-scale of support too thinly, while not

enabling a personal level of support either.

# Chapter Three
# **Framework**

## 3.1          Introduction

As stated in Chapter 1.3, the primary objective of this research is to investigate the potential of developing peer-support networks, actionable education frameworks and independent learning strategies through information communications technology (ICT) for students with Specific Learning Difficulties (SLDs) and similar non-traditional third level populations. In order to address the broad range of needs borne by the participants and indeed the objectives and research questions of the research, it would be helpful to break these considerations into thematic domains of participation. Based on the aforementioned literature as noted in table 3.1, these could be considered as being:

| Thematic Domain | Key reference points in literature |
|:---:|:---:|
| Engagement | 1.2, 2.2.1, 2.3.1 |
| Interaction | 1.1, 2.3.2, 2.3.5 |
| Motivation | 1.2, 2.1, 2.3.4, 2.3.5 |

**Table 3.1          Thematic Domains**

In terms of application and objectives, they could be viewed thusly:

**Engagement**

- To initiate and monitor self-sustaining support networks through ICT for students with SLDs.

  o This could be achieved through the provision of a contextualised online network or service. Participants utilising such a system could receive academic support from the normative facilitator or tutor, or indeed from each other. The potential to engage more fully, becoming advocates, agents, or even active shareholders in the site would be an ideal outcome of this.

**Interaction**

- Once engagement had been established, the promotion of peer-based interaction, communication and support could be encouraged to address the needs of the student SLD population academically and socially.

  o In this, the students would interact with both the primary researcher and each other as well. The formation of in-groups and open discussion and contextualised academic support and sharing would be the key factor to observe and explore.

**Motivation**

- Through engagement and communication, the process could subsequently begin to
  address the socio-emotional aspect, providing the students opportunity to assemble
  scripts and frames for schemata individually and as a group that could be used
  outside of the network and education setting, promoting socio-emotional wellbeing,
  intrinsic motivation, and self-advocacy.

  o In this, the socio-emotional support will be most relevant – how the
    participants view themselves and support each other on an emotional and
    social level in addition to the academic.

Additional benefits from this framework would include the development of actionable
education frameworks, adaptive learning strategies and reusable learning resources (RLR)
for same through the project.

Further considerations which were to be taken into account when addressing the above
included the need to develop the framework in a cost-effective and easily replicable state.
This would be important both for the ongoing research and for any party interested in using
or adapting the work thereafter. Ideally, in addition to providing support for the SLD
student population, the research was geared wherever possible to promote and enhance
student retention, resilience and performance.

**3.2**          **Research Questions and Hypotheses**

In order to investigate and realise the research objectives as established in section 1.3, the

following three research questions (and have in turn been applied to the thematic domains

for additional consideration):

### RQ1. Engagement

Can online learning networks enable the engagement of the SLD student

population?

### RQ2. Interaction

In what way(s) can communication through online learning networks increase peer-

based interaction within the SLD student population?

### RQ3. Motivation

Can online learning networks be utilised to support the socio-emotional domain

needs of the SLD student population?

The following section will address each research question in turn in order to establish the

working hypotheses for each.

**3.2.1          Research Question 1: Engagement**

*RQ1.  Can online learning networks enable the engagement of the SLD student population?*

The first proof of concept to be established is that of the development and uptake of a contextualised social network or service. As stated in section 2.3.5, there is the potential to engage the population (or at least a sample of same) at a support level, providing a benefit at the outset to act as an incentive for use. At this level, the extrinsic motivation as mentioned in section 2.3.4 may be more relevant under this consideration, though the novelty of an online network built specifically for them may itself prove useful. As there will be no obvious or overt evidence of an SLD per the markers as outlined at each stage of section 2.2 when posting, the first hypothesis can be posited as being:

> *H1: An online learning environment can be used as an active means of democratically supporting SLD academic needs.*

While H1 acknowledges the democracy of function, there are also pragmatic aspects to consider. Systems are typically designed with a majority in mind rather than a niche or minority group, as stated in section 1.2. As a result, these systems would also not be obliged to meet the requirements of universal design as outlined in section 2.3.6, beyond a minimum legal requirement. In addition to developing a democratic support, it is important to design a practical and above all useful support that meets to adaptive needs of the

participants. By presenting and maintaining the dialogic process outlined by Avis (2000) in

2.3.4 and emphasising the goal-based learning community of Snowden (2004) – in this

case, the need of the participant to do as well as possible academically – as well as the

presence of the primary researcher as an active support within the action research, the

second hypothesis can be stated as:

> *H2: The development of online learning environments will enable a practical*
>
> *support for engaged students in third level education which can enhance overall*
>
> *performance*

### 3.2.2          Research Question 2: Interaction

*RQ2.  In what way(s) can communication through online learning networks increase peer-*
*based interaction within the SLD student population?*

Moving on from engagement, the next level of investigation should look towards the

communication and interactions of the population, both with the primary researcher and

each other.  Snowden's concept of a goal-based environment (2004) as mentioned in

section 2.3.4 is integral to this. By establishing an online network or service as one geared

towards supporting the participants as well as enabling to interact with their peers, focus

can be placed on their academic achievements. While prompting and opening messages may be placed to invite discussion at the outset, room needs to be allowed for the participants themselves to state what their needs are, rather than assuming it on their behalf (in acknowledgement of Walmsley and Oliver's self-advocating emancipator theories as mentioned in section 2.3.2). Utilising the suggestion of Firth et al. (2008) to create at least the sense of perceived control, if not outright agency, would be important in this regard. By asking a question relevant to their performance or needs and receiving a timely response, not only is the option for further discussion in this channel, they may also begin more actively posting and using the network outright (encouraging others to do so in the process). Therefore the next hypothesis could be summarised thusly:

*H3*: *Goal-oriented communication through social networks develops the capacity for self-advocacy*

As noted in section 2.3.2, Walmsley (2001, 2004) and Oliver (1992, 2002) were keen proponents of emancipatory research, for ethical and logistical reasons – a population has an active role in how such actions should proceed. As suggested by Black and Roberts (2009), people with SLDs are 'experts within their own support needs.' By dint of having an extant learning condition, participants will have through personal familiarity a deeper and more meaningful understanding of what another participant experience s through their condition than someone without. Barker (2009, 2012) as cited in section 2.3.5 suggests that online environments are ideal venues to address issues of self-esteem, social-esteem, and –

gratification (provided of course that the markers for intrinsic benefit such as enjoyment have been addressed). Blended with the suppositions of Boud et al. (ed. 2001) that learners will naturally engage in informal peer discourse, we can enable the opportunity for peer-based support to arise. By utilising the network for their explicit academic needs, whether receiving support from the primary researcher or their peers, participants will be able to become more comfortable with using the network at the outset. As this use continues and they become more comfortable with use, they may be more likely to share and disclose information with each other. Using this as a synthesis, we can suggest that:

*H4: By providing a secure contextualised space for communication, peer-based support can emerge.*

### 3.2.3        Research Question 3: Motivation

*RQ3.  Can online learning networks be utilised to support the socio-emotional domain needs of the SLD student population?*

As suggested in section 2.3.4, the sense of mental difference and the issues of (hidden) social geographies are a critical concern to be addressed. The virtual nature of an online setting, as well as a contextualised and gated security measure in order to remove concerns for privacy and safety as discussed in section 2.3.5. Barker (2009, 2012) was particularly

focused on the concept and inherent potential of peer communication and interaction through social network sites enabling emotional domains. The lowered state of visibility would also be of advantage in this regard, since there is no way to be 'seen' entering the space. Privacy and awareness of difference are themselves typical concerns, as suggested in section 2.3.4, but this factor can also be addressed by a balance of trust suggested by Lin and Liu (2012) in section 2.3.5. In providing a medium for interaction as suggested in section 2.3.2, which in turn can engender a lowered state of mental difference mentioned both in the Chapter 1 introduction and section 2.3.4 and in turn a greater willingness to share and support. With these considerations in mind, we can therefore posit the following hypothesis for exploration:

*H5: Contextualised online learning environments can be used to safely address the socio-emotional domains of students with SLDs.*

In synthesising the impact of intrinsic and extrinsic motivations with Chang and Hsiao's (2013) view of behaviour shaping use, an effective expression of the project's level of engagement would be the affectation of what Barnes (2011) referred to as 'habit and continuance intention'. A continual upward incremental increase in site use as a service, or indeed as a social or recreational tool, even by a small core group or individuals in isolation, would allow reasonable assumptions to be made about their behaviours and levels of engagement. In contrast to this, there is also the potential that Snowden's banking system of education (2004) as mentioned in section 2.3.5 may cross over into the online

network, making the process more theory-transactional extrinsically motivated (and potentially demotivated) state rather than emotional cultivation and intrinsically motivated. This is of notable concern since, as discussed in section 2.3.4, it can lead to a sense of affected self-worth and negative affectivity, factors already at risk of being present due to what Hall described as the 'embedded sense of mental difference' (2004). Verhagen et al. (2012) and Barnes (2011) discussion in regards to the impact of motivation as mentioned in section 2.3.5 is implicit to this also. Blending these theories with that of Holmes and O'Loughlin (2012), who suggested online spaces as an ideal location for learning-disabled populations to explore their identities, we can suggest the following hypothesis:

*H6: Online learning environments can be used to enhance the intrinsic motivation of students with SLDs*

## 3.3          Investigative Framework

### 3.3.1          Considering an Online Support System

Due to the wide range of conditions that could potentially engage with this form of service, a drive towards the philosophy of universal design as outlined in 2.4.2 was pursued. The following section details how this was pursued both in terms of the site and the role of the researcher as an embedded support.

When the research project began, the initial goal was to create a contextualised online environment that would allow students with specific learning difficulties (SLD) not only to interact, but to engage with each other. The initial level of success would be measured by students interacting with an online support system or network for academic support and, eventually, each other. The knock-on effect of this would be lead to their acting as an emergent peer-support group which could begin to address the socio-emotional issues raised by their individual complications. The absolute ideal outcome would be their interactions rendering the primary researcher's position as the de facto moderator redundant when they transitioned into the role of active shareholders who no longer required the presence of the primary researcher as a support on the online support system.

### 3.3.2          Guiding Principles and anticipated behaviours

In addition to the aforementioned thematic domains established (in order to address the ideological and methodological aspect), the framework itself requires a separate domain which itself would address key aspects external to the participants to an extent, such as design, process, and application. To this end, a fourth domain which would interconnect with the emotional domains in order to enable them while being itself more functional as a guiding principle is necessary. For the sake of simplicity, we should consider this domain System, as noted in Table 3.2.

| System | Reference points in literature |
|--------|-------------------------------|
| Supports | 2.3.1 |
| Brand | 2.2.8, 2.3.6 |
| Form | 1.2, 2.3.6 |
| Flexibility | 2.1, 2.3.6 |
| Participants | 1.1, 2.1 |

**Table 3.2**          **System elements**

- Supports in this case refers to the role of the primary researcher as moderator and facilitator within the structure, as well as any emergent peer-support. This element would primarily be methodological in form and content.

- Brand in this case would based around the distinguishing or identifying 'packaging' of the system – the logo, visualisations, and design style rather than the structural considerations such as software or hardware.

  o While the term 'brand' risks a slightly capitalistic or mercenary tone, it is the simplest expression to convey the project identity, and would also be the best means of addressing the visual and memory issues of the participants as well as more pragmatic factors such as recruitment.

- Form is the structural nature of the system – the matters concerned with and composed of software and hardware, as well as functional considerations like the

- Flexibility can refer to two points within the framework – the ability to access the system in a way that's convenient for the user (from a preferred device or access point) and the flexibility of use that is necessary to allow for a range of conditions and conditions of use.

- Participants as an element of the system can be considered in two ways – the individual and the group members.

Per figure 3.1, there is also an interconnectivity of relationships these elements – brand and form are closely linked, as are access and form due to the designed nature of each. Participants as an element would most directly interrelate with Access (to use and avail of the system) and Supports. The nature of Supports in and of themselves require the presence of the Participants, while also being a direct aspect of the Brand identity – the supports are, after all, the initial incentive to use the system.
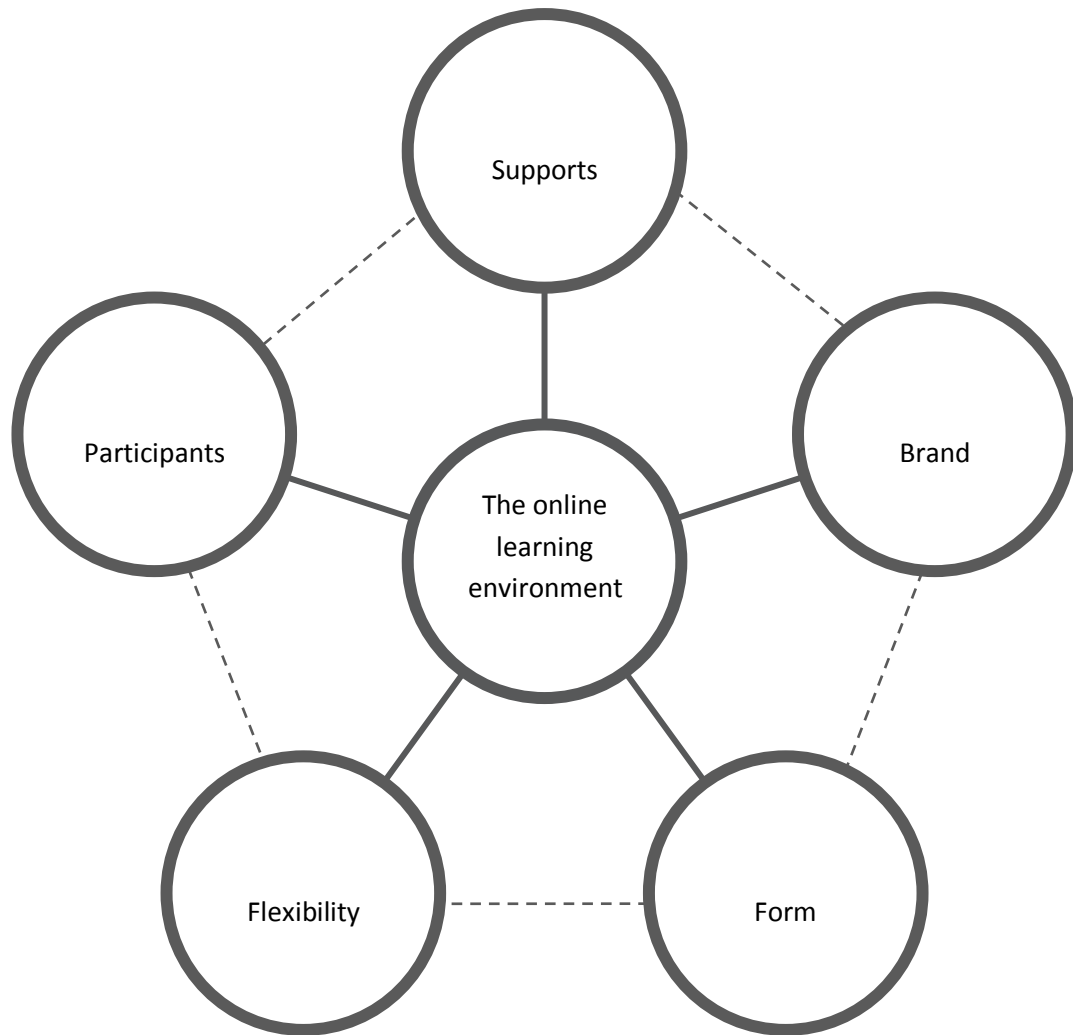
**Figure 3.1          Framework elements for the system**

Participant

Mediating
system

Other
participants
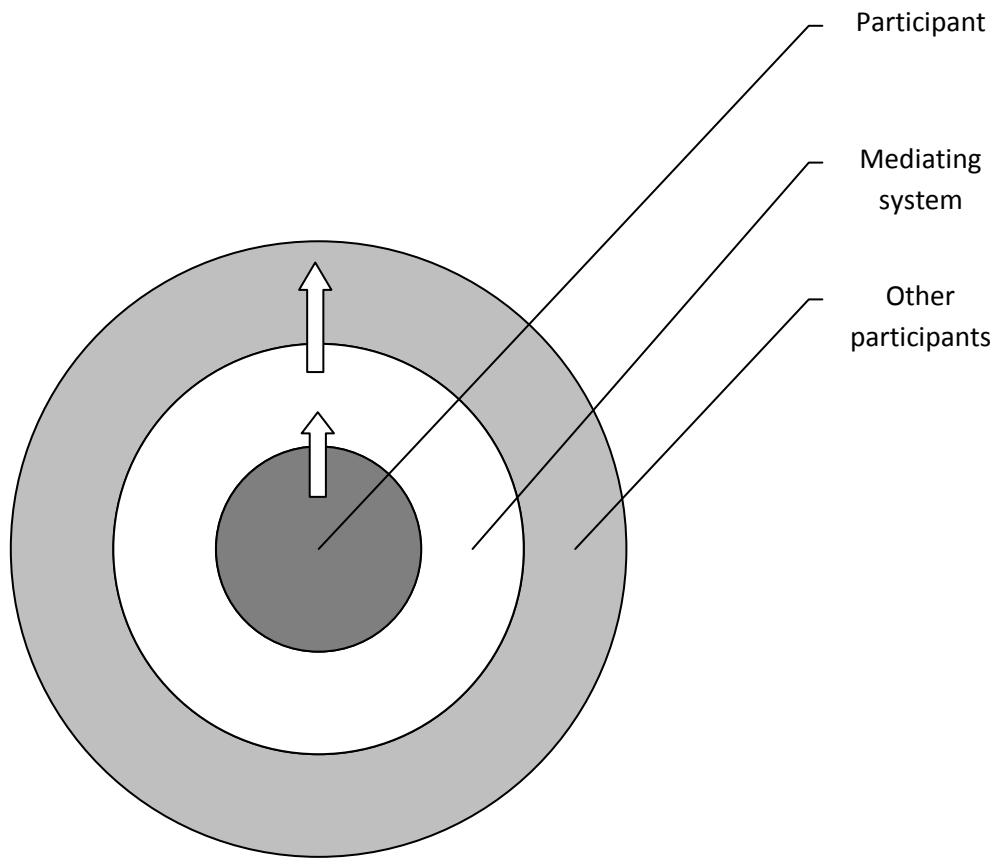
**Figure 3.2          Outward moving system engagement**

As this is a human-centred framework, the participants individually need to be placed at the

centre of the system, with all other support aspects enveloping them. In this case, and per

figure 3.2, the basic application the structure is of the participant first engaging with the

online learning resource as a mediator. Within this, they can communicate needs and

receive support. Moving on from this, per the second arrow outwards, they can use the

mediating system to engage with other participants. This pattern can then repeat, as the

outermost circle is, for a second participant, the central point (which in turn moves

outwards, first to the mediating system, followed by another participant (or participants in

group discussion).

i. New participant
begins using the
system

ii. Participant receives
benefit or utility from
using the system

iii. Participant
engages habitually
with the system,
sharing their
experience in the
process
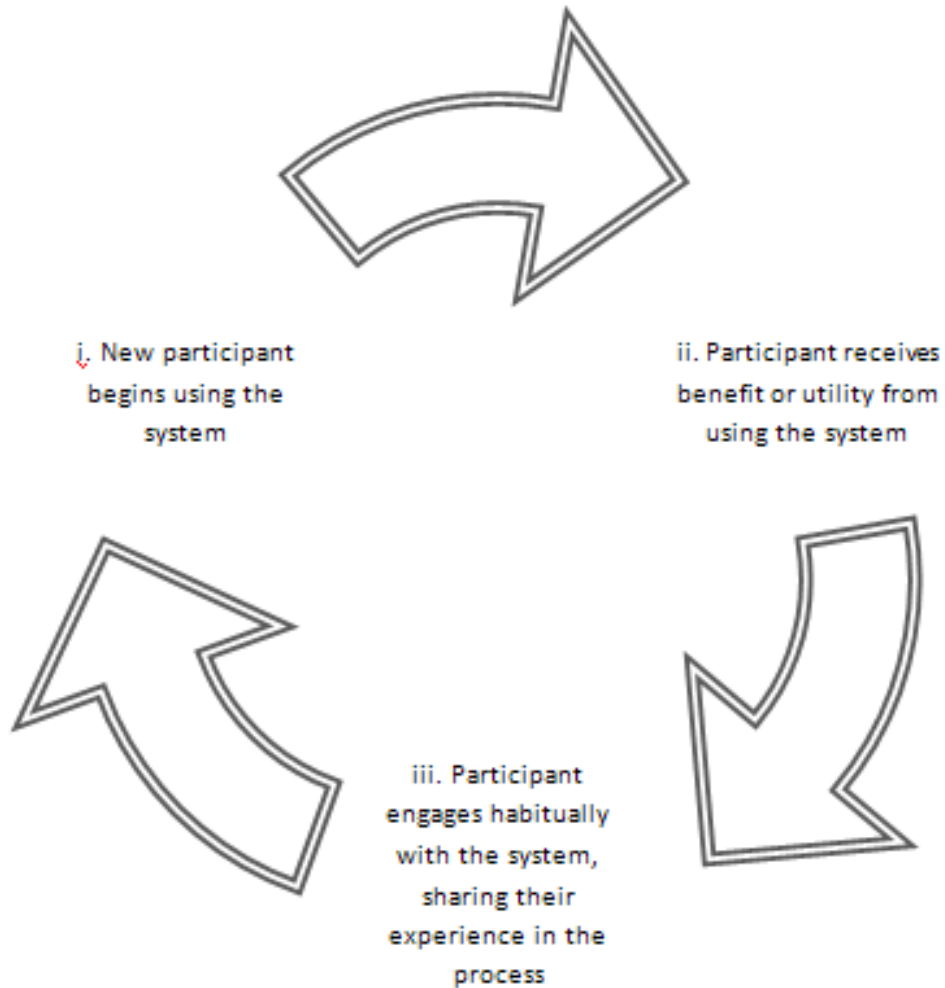
**Figure 3.3**          **Cycle of participant engagement**

In more humanistic terms, the pattern or cycle of engagement from the participant

perspective would be closer to figure 3.3. In an idealised expression indicated by the

theorists in 2.3.5, the flow of engagement begins with a new participant using the system (i), transitioning to a receipt of benefit for their use (ii), either through mediated support from the moderator or a peer already in the system, which in turn allows them to become more likely to engage habitually with the system, and in turn other participants, leading them to provide support for a new participant who now enters the system (returning to i in the process).
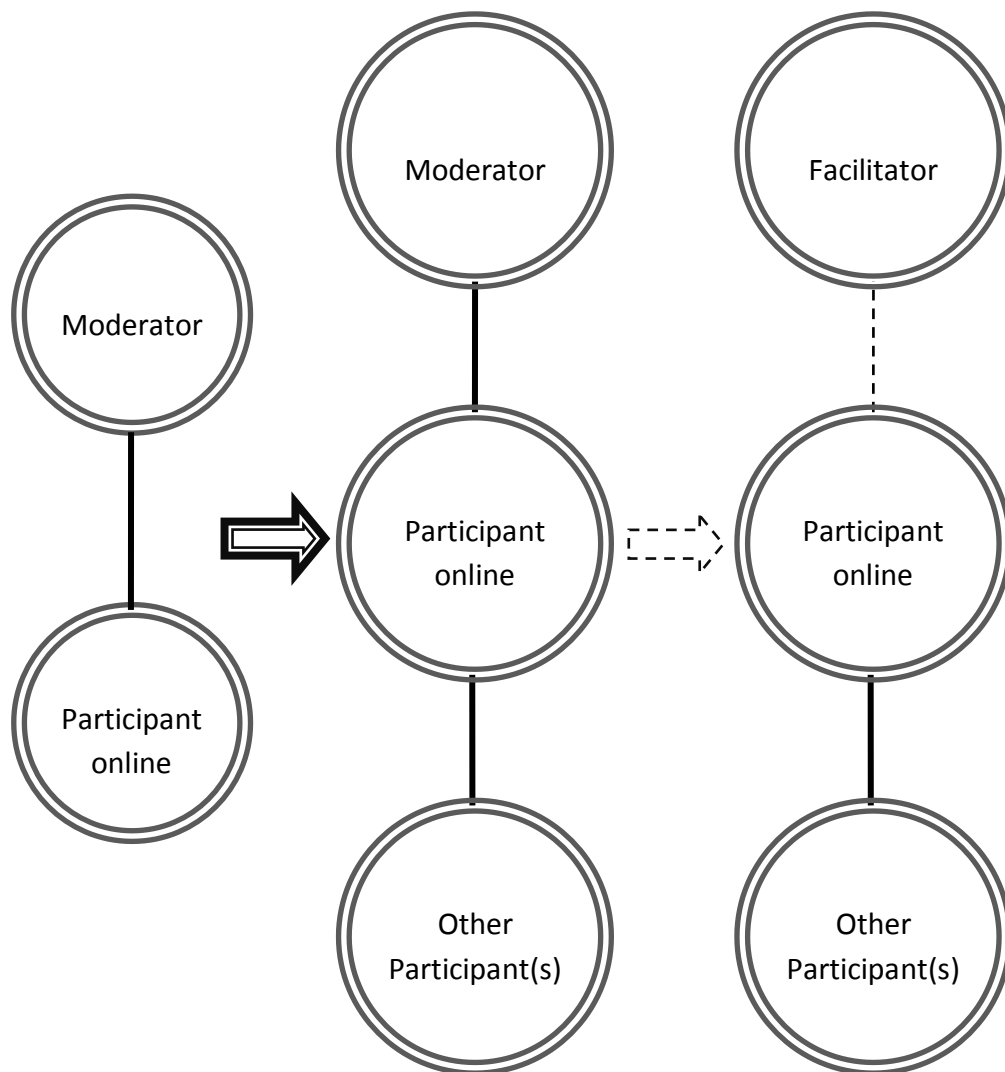


**Figure 3.4          The modes of interaction**

Figure 3.4, meanwhile indicates the potential forms of interaction most likely to occur within the online environment. Per sections 2.3.4 and 2.3.5, the participant may at the outset engage only with the moderator (if at all), by dint of being a de facto authority within the system and also the confirmed point of support for their needs and queries. As needs become more explicit or beyond the remit of what can be provided by the moderator, this line of communication may expand to incorporate other participants, moving as a result into peer-based support. The third expression is the most theoretical, in that should the participants engagement with each other and the network mature to actually not require the presence of moderation, the role of the moderator could at this point shift towards facilitation (or observation) only: present as needed, but a figurant and no longer active as a participant.

## 3.4        Conclusion

This chapter has addressed the key issues as regards the framework of the research. Having reiterated the research questions it then went on to establish the hypotheses that will form the basis of the research, as well as also outlined the three primary thematic domains of Engagement, Interaction, and Motivation, as well as the internal structural domain of System. It anticipated the expected theoretical requirements, both in terms of structure and behavior, giving visual representation of same.

Moving forward, the next chapter will address the methodological function of the site and service, while also tracking the adjustments to same over the course of the data gathering phases.

# Chapter Four
# Methodology

### 4.1            Introduction

Having established the framework upon which the research and service will operate, it is next necessary to look at the specific steps taken over the course of the data gathering and interactions within same.

To start, the philosophical basis will be outlined before moving into a detailed summary of the operation of and within the site. The section following this will then discuss the decision-making process both in the design of the website and the functional considerations for both the intended population and for replication in future studies as needs be.  To this end, the ideation of the brand and style/continuity through UDT as applied to the visual/cognitive needs of the participants are addressed and discussed in detail. This is turn will be followed by establishing the standard procedure for the data gathering phases, including the solicitation of feedback. Any transitional adjustments in standard operating procedure for the main phase will also be noted where applicable.

## 4.2        Philosophical paradigms and considerations

Due to the focus on socio-emotional and constructivist factors implicit to the research, the primary emphasis would be placed on qualitative analysis, which itself tends to focus more on understanding the nature of human behaviour. It's important to note that there are a significant number of approaches that can be taken in this regard (Savin-Baden and Major, 2013). Among the most relevant in this regard would include ethnography, a research design aimed at exploring cultural phenomena, knowledge, and systems of meaning (Geertz, 1973; Philipsen, 1992); grounded theory, the systematic discovery of theory through data analysis (Martin and Turner, 1986); and (participatory) action research, which observes and describes behavior while also executing interventions of involvement with the subject to create a positive improvement (Waterman, Tillen, Dickson, and de Koning, 2001)

Due to the culturally embedded nature of the research, an ethnographic view is certainly reasonable to assume. Ethnography applies in this case quite well as the primary researcher is a de facto outsider. Certainly, this would serve as a practical philosophy for procedure and integration, though it is not without limitations. Ethnographies are typically built around direct observation or the target population, usually by being based within physical proximity. Given the concerns around visibility and awareness of difference for the participants, this would have drawbacks in how it could affect the participants were it possible to apply. By shifting the research to the online environment, this visibility is reduced until the participant wants to be acknowledged, but an additional perspective needs to be taken in order to embed with the group. Browne (2011) cites cyber-ethnography as a

practical methodology to explore the online culture for a population, rooting the process firmly within ethnographic boundaries. This may however be at odds with the differing social behaviours and indeed ethical considerations that can occur in a virtualised space, which has its own rules of mediation and engagement (Kozinets, 2002, 2006). The concept of netnography has been built as a means of moving beyond this, transliterating the concept contextually rather than just directly translating the methodology to a different viewpoint.

A phenomenological approach would also be relevant under these circumstances given Ratner's value of it for '*illuminating individual intentionality*' (1993). Phenomenology operates by acknowledging and bracketing assumptions and biases in order to address the meaning and essence of an experience or study in an objective fashion (Boland, 1985). This process can be especially practical for small sample sizes (Boland and Day, 1989) and Groenewald (2004) notes this as being a valid option to extrapolate information from interview and field note data, a conceit that can be put in turn towards open ended qualitative questioning. Turkle (1996) suggests that the virtuality of an online environment is itself something monumental to the nature of fluid identity – not only relevant from a phenomenological perspective but also a factor associated with the online behaviours noted in section 2.3.5.

In the development of a support site, at least as an initial incentive for use, online (third party) support is required, necessitating actions taken by the primary researcher. To that end, utilizing the guidelines of ethnography within the structure of an action research would be relevant at least in the early stages of the project. This would enable participation with

the population, while also a balance-point for any potential skewing of findings. Kemmis

and McTaggart (2000) proposed a suitable spiral-based structure of operation which posits

at the outset Plan > Act & Observe > Reflect, upon which it transitions into Revised Plan >

Act & Observe > Reflect, as seen in figure 4.1 below.
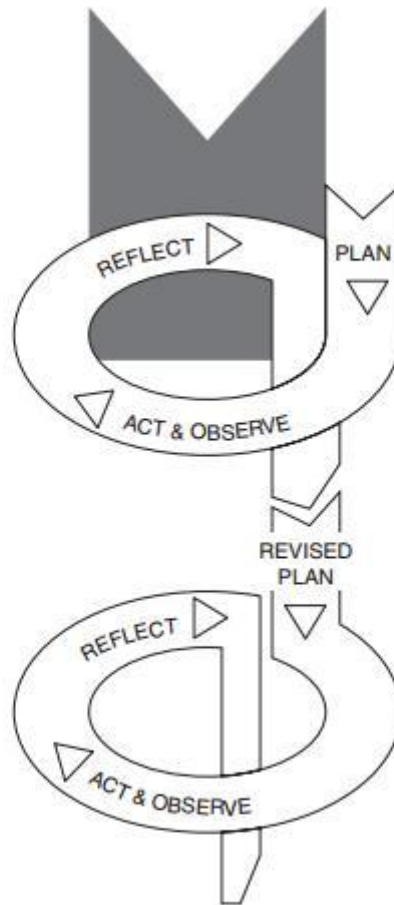


**Figure 4.1          Kemmis and McTaggart's action research spiral**

Cohen and Mannion (1994) take a similar view, as action research enables '*the step-by-step*

*process… constantly monitored over varying periods of time and by a variety of*

*mechanisms.*' It would however be critical to outline and then hold to a specific set of

behaviours for engagement throughout in order to create a control for the data. The action research spiral fits with the required adaptability of the online network structure. The initial 'Plan' phase aligns with the preparation, testing, and construction of the network, while 'Act & Observe' applies directly to the participants first use, exploration, and testing of the service during the pilot phase. In turn, this provides feedback in the micro-scale for the 'Reflect' phase, leading onwards into the anticipated revised plan for the main phase of data gathering. This cycle then can continue in a similar fashion, with the cumulative reflections from both phases leading into the macro-scale data for the findings. Any future research would at this stage be in a position to refine the data for further revisions moving into their next phase.

In terms of specific analysis methodologies, Guerin (2012) suggests several which could apply: Discourse analysis, Grounded Theory, Thematic Analysis, and Content Analysis. Discourse analysis would focus on the linguistic and written interactions and correspondence which would occur within the project (Potter and Wetherell, 1994). Given that the majority of interactions – and as a result the data gleaned from these – will be based around how, when, and what is written by participants, this would form the backbone of the study. The sequence, structure, syntax, lexicon and tone of the language used will be of particular note in this regard, as would the genre of discourse: will the network remain academic only, or will social connections through be formed?

In order to allow for unseen contexts – such as the actual intention of the communication as opposed to the inferred assumption, this should not be isolated from other forms of

analysis. The inductive nature of grounded theory would allow some balance for this, while also enabling a body of information to be developed, particularly in regards to similarities and differences of interaction and response (Langridge and Hagger-Johnson, 2009) from participants across a wide range of conditions. In looking towards recurring or potential issues within the SLD population thematic analysis can provide a relevancy, since the primary focus is on the examination and coding of themes and patterns within the data (Braun and Clarke, 2006). While Howitt (2010) suggests there is a lack of complexity within this, identifying thematic domains can aid in the initial observations, with the ongoing findings themselves proving useful as a guideline for adaptation and behavior within the framework of the research. Content Analysis meanwhile is a practical option should participation or use of the network be higher than expected. The primary benefit of this is in analysing significant amounts of textual data to identify properties, particular as regards the frequency of keywords and statements.

While the above are fundamental to the overall goals of the research, the human-centeredness of the work should at this stage be reiterated. The participant experience is itself the axis upon which all pivots and, resultantly, needs to be kept at the center of all workings, analysis, and discussion.  As a phenomenological approach operates by reducing the phenomenon to its essence, bracketing bias and theory in order to view it in a non-abstracted fashion (Boland, 1985) and attempt to observe the meaning of the object of the study (Stapleton, 2001), it would enable a more effective examination of findings from this experiential level. This would also allow for a blending of the social and medical models of disability discussed in section 2.3.3. Since the participant doesn't experience an outright or

inherent separation of these concepts in their actual condition – this only occurs when the social/medical parameters demand it – the documentation and analysis of the findings should also make the effort to reflect this. Of particular note in this will be the capacity for intersubjectivity to emerge from and be observed in the network interactions over the more isolated and solipsistic individual posts and experiences.

**4.3          The Website**

**4.3.1          Site structure**

For the sake of maintaining options for adaptation and adjustment as needs require over the course of the study, as well as the element of flexibility cited in section 3.3.2, minimising costs and avoiding conflicting issues of copyright, software used will maintain Creative Commons (CC) or be under General Public Licence (GPL). The Student Jam Website was in two parts: a core website that advertising can drive participants towards and a gated message board. The core site was built through Wordpress.org – this allowed an easy to design and use content management system, enabling a website that could quickly and easily be updated as required, including the listing of project information, a news and update blog, key links, and integration of social media sites such as Facebook, Tumblr, and Twitter as required.

The second part of the website, the shared database/message board system, was present to allow participants to interact with each other. This section of the site was built using phpBB software – both easy to apply and common on the internet, being the primary structure and build of most message boards available. This would allow some measure of skeuomorphic design without impinging on intellectual property rights from more recent site designs such as Facebook or Twitter. The use of phpBB, aside from being GPL and both readily supported and customisable, was also useful from the perspective of searching for and archiving information.

Both parts of the site were designed to be able to access as many, if not all, other parts of the site from each page. In addition to tabs which would enable quick travel from one section to another, the Student Jam logo which was present on every page was also a link which would allow an immediate return to the front page of the area as is standard on the internet (the front page for the store front part of the site being the landing page, while the front page for the forums was the main forum menu where all forums were accessible.)

Adaptations such as an Instant Message (IM)/communication conference system could also be incorporated on request to allow online conversations in real time due to this flexibility of licence. The message board was sub-divided into several sections in order to allow clear distinction of subject, such as Academic, General and Social. The boards also had the option to sub-divide further, should participants want to look at subject-specific work (or should the quantity of data assembled require it from an organizational perspective.) Any

changes made would be indicated to participants first and with at least two weeks notice so as to avoid confusion or panic. A section for technical support and feedback was also provided. It was important to ensure that all conversations on the board are threaded so that participants can clearly see who is talking to whom and in regards to what subject. With sections and sub-sections available, and any topics or discussions started being threaded, it would be easier to track the flow of information on any given subject, and to delineate the thought process of both the research for the participants and the participants for the researcher. Were peer-to-peer discussion to ensue, it would also enable the observation of that process and ensure accurate data was shared under moderation.

The option of phpBB also enabled the participants with a range of customizations in order to fulfill the criteria established in section 2.3.6. Should a personal colour scheme be required, it could be adjusted in system or arranged through recoding. Typefaces and styles were also customisable, again to give a greater range of agency to the participant. In order to allow for a range of experiential levels, step-by-step and visual guides were also created so that anyone uncertain of what they could do would be able to learn the system. TrueType fonts were set as standard, with the option to change the font to one more comfortable to the user being embedded into the preferences. Fonts without serifs were also set as the default in order to cut down on any potential visual issues, though participants could set them as a default if they so wished.

The site was hosted on TotalChoice Hosting (TCH) due to their robust back-up options should anything go awry with the primary servers (so there would be a reduced likelihood of site downtime.) Site certification was also secured through TCH at the same time as domain registration in order to reduce the likelihood of issues with the pages loading for participants (as non-certified web pages could potentially be blocked as malware or unsecure website pages.) In order to maintain as high a level of privacy as is possible, the site was made private and removed from search engine indexing. Unless the exact website link was typed into the Uniform Resource Locator (URL) bar or a link provided to the participant was used, a casual viewer would not be able to find the website (so if a body were to type student jam, or any iteration of that into a search engine in order to find the website, there would be no results found.)

### 4.3.2        Software options

A number of options for software and hosting were reviewed in anticipation of building the website. Certain factors were essential in this process – in order to maintain replicability later on, low- or no-cost services were sought for preference, and preferably with the options falling under a GNU General Public Licence (GNU GPL or GPL) or Creative Commons (CC) licence. The former is a copyleft licence which enables the use, study, modification, and sharing of software and derived works (GNU, 2011); the latter isn't typically used in regards to software (Creative Commons, 2010a) but may apply as regards

to the general concept since it is a public copyright licence that enables the publication, distribution, editing, and remixing of copyrighted material (Creative Commons, 2010).

Facebook was, due to its exceptional popularity (Wall Street Journal, 2012), an early consideration. It was however rejected as an option for the site proper for a number of reasons. At the outset, use of Facebook on campus grounds in the primary research location is blocked on the institute intranet between the hours of 9am and 3pm, immediately removing student usage within that timeframe. This is to say nothing of the privacy, safety, and data control issues stated in section 2.3.5. There would be as a result a potential limiting of the information – personal or otherwise – that participants might be willing to share with others on the website due to the risk of normative peers seeing this disclosure, unlike a gated site where this information could be more easily safeguarded.

Ning was considered due to its high level of customisation and feature modification. It also had the option of integrating and utilising other social media logins, such as Facebook and Twitter, which would allow the option of user connectivity (TechCrunch, 2010) without posting on the main sites themselves (where SLD visibility might be an issue). The removal of the free Ning networks dampened the viability of this as a useful network (Ning, 2010).

Both Diaspora and Anahita Open Source software were also considered, due to their sheer level of customisation and effective third party untracked and untraced on-site behaviour.

Their status as being in beta-testing removed them during site development, but would

certainly be more viable now due to the enhanced stability of their builds and their ongoing

statements on post and ownership rights (Diaspora Foundation, 2011; Anahita, 2011).

Chamilo and Oracle were also considered, though the high learning curve for their builds

made them untenable at that juncture.

ProBoards were considered as well, though this software was in turn edged out in favour of

phpBB due to their high level of customisation (particularly in regards to adding and

modifying templates which would suit students with learning difficulties). Additionally,

they allowed for robust monitoring and gatekeeping controls, so it would be a simpler

matter to protect the participant environment and issue access for same. The relative

commonality of the message board type on the internet would also add a level of

skeuomorphism for any students used to online participation.

The Content Management System would be operated through Wordpress.org, both due to

the ease of use through the site, the options for customization in same, and the primary

researcher's own experience.

### 4.3.3        Design Requirements

Universal design, as stated in section 2.4.2 and reiterated in 3.3.2, operated as the

cornerstone of the project. Flexibility in use was among the first aspects considered in

regards to the site design. A streamlined interface was sought on both sections of the website. The design emphasis needs were in many respects placed on students with visual perception issues such as Dyslexia, both as they would potentially face the greatest barrier to use (as their visual perception can be impaired) and as they would statistically be the most common.
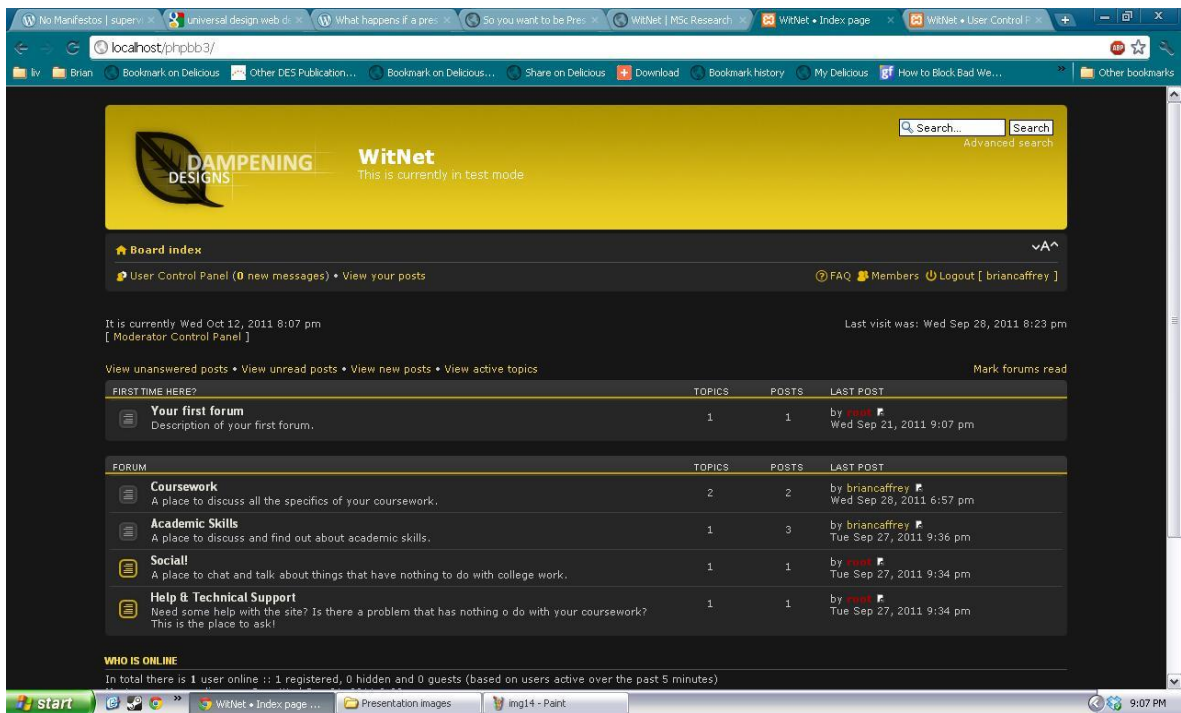


**Figure 4.2**          **Example of high contrast theme suitable for dyslexics**

Figure 4.2 is an example of high contrast, suitable for dyslexic readers in particular – inverting the traditional colour scheme from black text on a white background to white text on a black background is easier to make out and focus upon (as suggested in section 2.3.6). Figure 4.3 meanwhile uses a more traditional style, though the brown tones offset an entirely white backdrop, allowing data to be both contained within a specific area and more perceptible as a result. Figure 4.4 meanwhile mixes elements of both, and can act as a

suitable medium between the two. Other theme options were also rolled out with these to allow for varying preferences, using a similar style but typically with alternate colours such as red and blue.
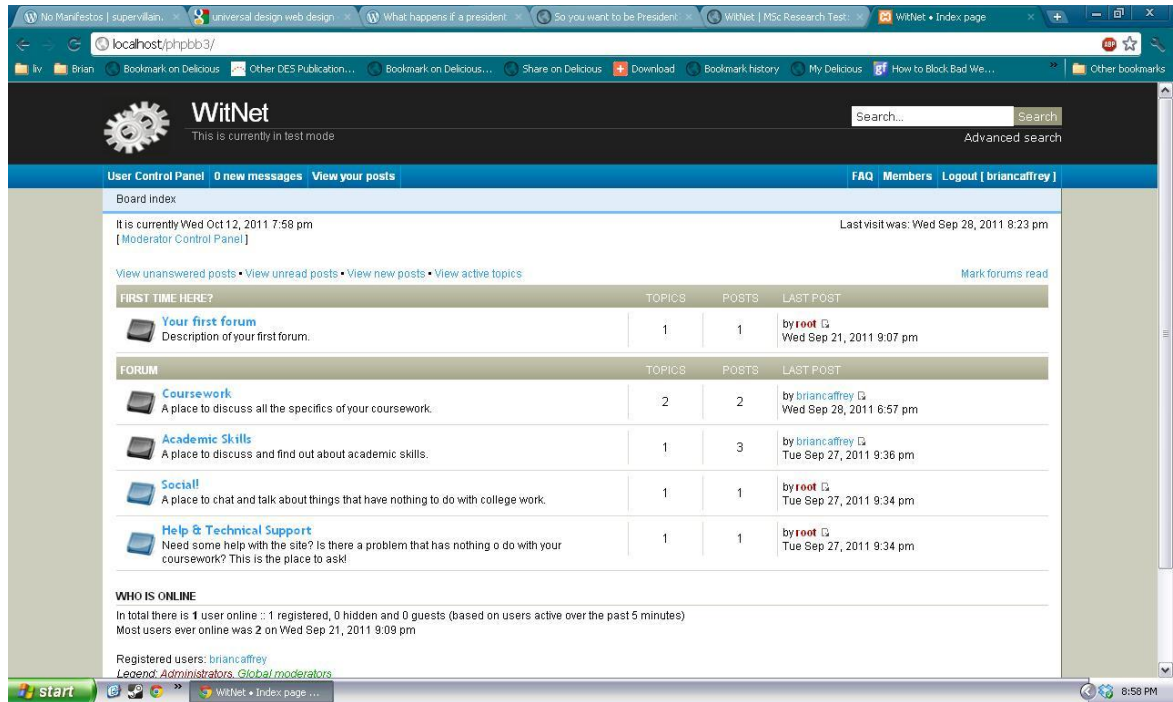


**Figure 4.3          Example of an easy to read theme**
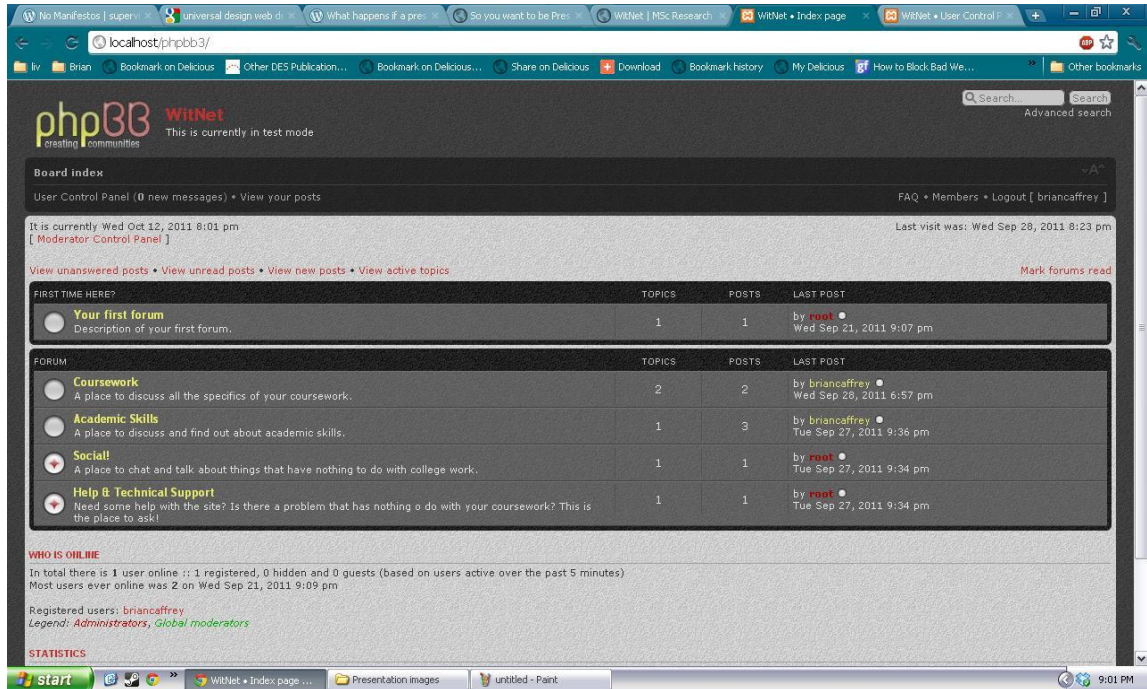
**Figure 4.4        A theme balanced both for contrast and easy reading**
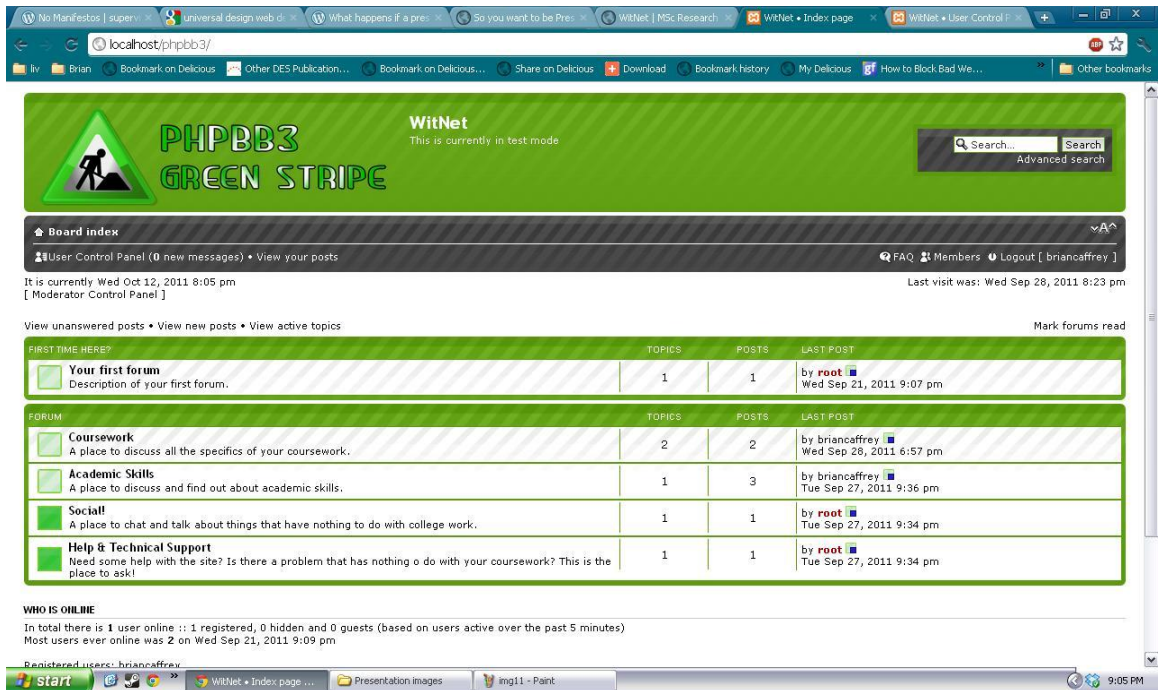


**Figure 4.5        An unsuitable theme for dyslexics**

By contrast, a number of themes were also rejected. Figure 4.5 is an example of a patterned theme which would be unsuitabe due both to the distracting mature of patterning (when as cited in section 2.3.6 a plain theme is more suitable) and the presence of green (a colour which can prove problematic for colour blindness). The pattern also creates the risk of text distortion, which would be an unwelcome addition to the cognitive workload participants would already be undergoing. Figure 4.6 meanwhile is an example of how low contrast would present a problem – light grey text on a dark grey background can be difficult to read even without a specific learning difficulty. The blending colours of figure 4.7 also present issue, as information may be less perceptible or glossed over.
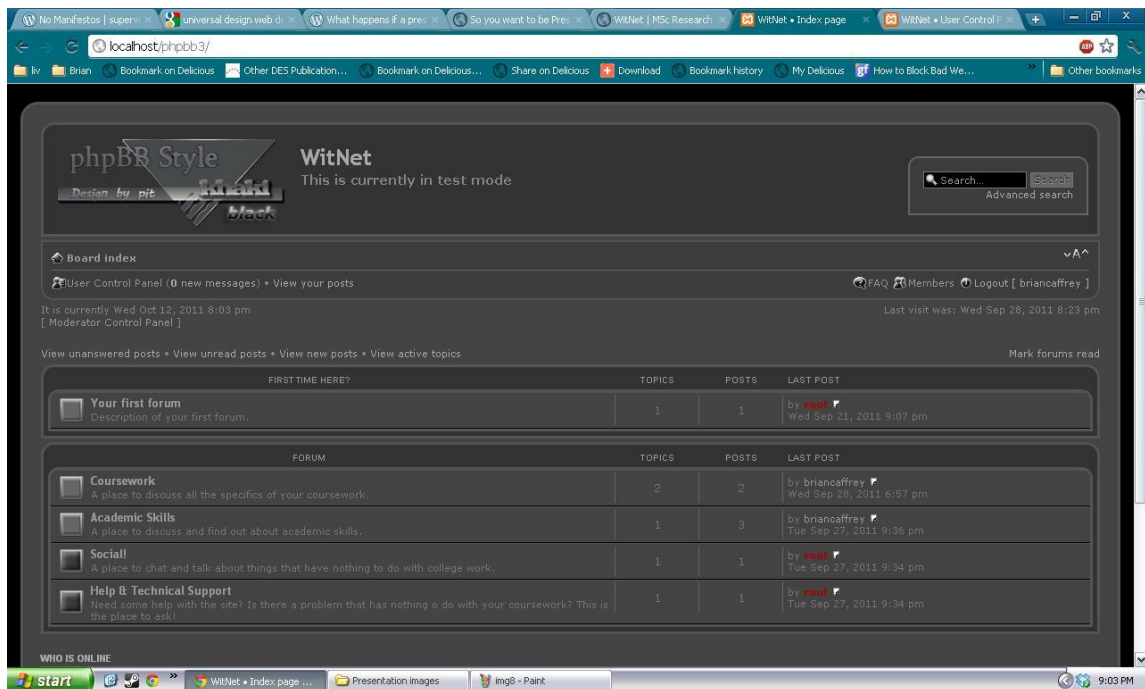


**Figure 4.6          An unsuitable low contrast theme**
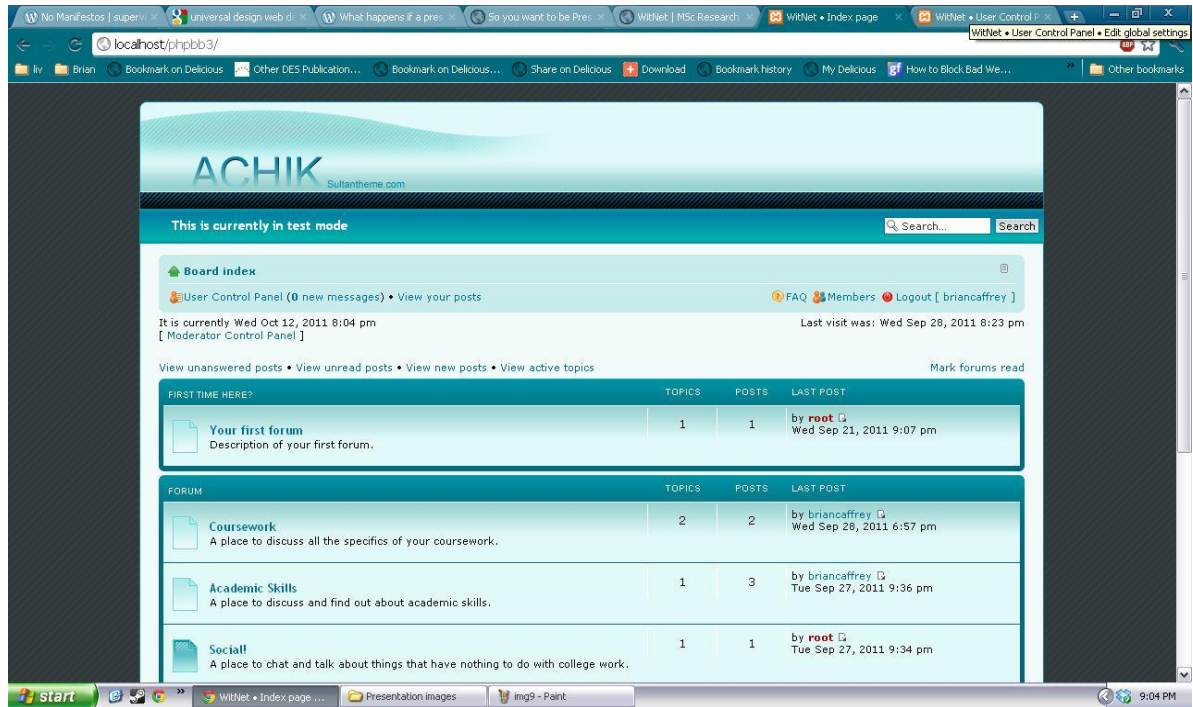
**Figure 4.7          An unsuitable blended colour theme**

The methodology of usage was also kept simple, with simple, delineated selection options and menus. Text was by default set in high contrast – the main site was typically white text on a black background, with a similar default colour scheme in the message board. Text scaling was built into all sections of the website, while theme/style changes were an option within the message board area. Six theme options were available to start, with an additional 30 prepared to be modified for use based on any needs described by the participants.

Both information and controls were kept perceptible and obvious, with major controls always aligning within the top third of the screen on every page. All message board posts were also in threaded fashion, so replies would fall under the question; replies to replies would also be tied and tiered to the relevant post in order to enable flow of conversation. If

participant A and B both posted a comment to a question, Participant C replying to Participant A would create an interlinked series of posts under the original post by A, while any replies to B would be under B's post.

The site was also kept simple and intuitive wherever possible, with the presumption of a low level of ICT experience. This would allow for any inexperienced users to adapt to the site while also not hindering those who have used similar sites or services before (and would in turn quickly acclimate to the structure). Buttons were space so that participants would not have to rely on precised clicking (enabling both imprecise use and limited mobility, as well as any potential smart phone users who would be working from a smaller screen).

### 4.3.4       The Brand

In developing the brand and stylistic elements indicated in the guiding principles of section 3.3.2, the name and web domain of Student Jam was decided upon for a number of reasons:

- Semiotically balanced

  - Gender, tone, politics, and potential meanings needed to be balanced and neutral, both as an ideology and an invitation to and for all participants.

- Easy to remember

- o Memory factors were a potential element and co-morbidity of many SLDs, so any name used would need to be distinct so as to retain participant interest, easy to remember, but also different to other supports as well.

- Unambiguous spelling

  - o Due to the commonality of issues such as dyslexia and such linguistic conditions, retaining a simple to spell name would be essential – words where letters double up or where there is a potentially confusing spelling ('ph' for 'f', for example) could have a negative impact and reduce uptake from the outset.

- Contextualised

  - o This would both aid in the memorisation of the name and brand, and also engender familiarity

- Concept

  - o Student Jam was meant to operate on a number of levels – the metaphorical 'jam' a student ends up in with a lot of work and closing deadline; as a musical 'jam' session, where many people collaborate.

- Demarcation

  - o The name should not imply or allow negative inferral of other sectors within the institute, other institutes, or related groups.

- Availability

o   Getting a name that was both suitable and available as a domain online was

essential.

Before selecting Student Jam, the working title of WITnet was used, both as a simple placeholder and in reference to the primary site of research, Waterford Institute of Technology. This name was discontinued for the actual launch both due to unavailability and as a precaution should the site be extended for use outside of the primary location. A selection of the rejected names is available in the Appendices.

### 4.3.5          Style and continuity

The Student Jam logo, as visible in figure 4.8, was built using Photoshop and vector images sourced from Vector Edit. While rough versions were hand drawn, these felt too home-made and not professional enough for use in the site rollout, even following image manipulation in Photoshop. By contrast, the vector-based logo used was far more pliable and adaptable for overall long-term use.

**Figure 4.8          The Student Jam Logo**

The jam jar motif was used on all aspects of the project, from the design of the website to use in the advertisements. The logo itself varied, from a nested Student Jam text on the label to a non-diegetic version where the Student Jam text appeared across or beside the jam jar icon. Additonally, the INSYTE research group logo was added to the logo wherever possible, both to draw the connection to the research group and in a fashion legitimise the project as an official research project for potential participants.

**Figure 4.9            The Student Jam logo as applied to the website**

The site logo was positioned at the top of all website pages, both to further the brand concept and establish concept and design continuity for users, irrespective of the themes and alterations they might make over the course of use. For the primary web page, this logo used a black fill, as we can see in figure 4.9, whereas in the forum the logo was white text on a transparency in order to allow the dominant colour selected by the participant in customisation to 'fill' the logo. This is demonstrated in figure 4.10, where the logo blends seamlessly with the red background used in the theme.

**Figure 4.10        The Student Jam Logo as applied to the forums**

## 4.4            The Role of the Researcher

As it was intended to develop a peer-support system rather than an intervention, direct

contact with the participants by the primary investigator was minimal and mediated by

medium of the network. This places the focus of this role directly into the context of an

action research, as indicated in section 4.2 with a view towards moving towards

ethnography only, should the participants take active stakeholding or ownership of the

support provision. As this was to be the initial level of system use for supports indicated in

section 3.3.2 by default, creating a specific series of guidelines and protocols was essential

for best practice and duty of care. If for any reason the participant felt that they could not

discuss issues that arose through the network, they were allowed to make an appointment

with the primary investigator to meet in person, but this was not to be viewed as a first resort and where possible would have a third party (such as the primary supervisor) present.

The role of the primary researcher on site was that of support, moderation, and facilitation. At the outset, this role was based on the extant role of the academic skills tutor that already existed within the institute's Student Life & Learning department and Disability Office therein. This enabled both a foundation of moderation behaviour and overt guidelines for best practice and a base concept that participants can understand (as it would be something they would encounter as a registered student of the institute and disability service).

### 4.4.1      The support role

The support role provided assistance to students that would be considered generic and universal in nature. This would be the most active expression of an action research as indicated in sections 4.2 and 4.4. A specific academic subject support was not given during this study, due to the sheer range of disciplines and subjects on offer, and also in spite of the primary researcher's qualifications (as it would not be fair to the students who would not receive subject specific support when others did). This also prevented any potential clash between the primary researcher's subjects of expertise and the lectures, modules, courses, and curriculum-based information being taught in the institute at the time. Students were however free to discuss their subjects and offer advice to each other.

The skills supported will be those which can apply generically to all students, such as grammar, formatting, phrasing, structure, syntax, referencing and bibliographies. Course work reviews (such as the analysis of a report or essay) were entertained under these auspices, though the specific theories addressed could not be assessed for accuracy per se. The sole exception in this would be if there is confusion around phrasing or expression, to make sure that the student has communicated the idea appropriately – the semantic meaning in this case would be addressed rather than the theory itself. A simplified example of this would be "Bob and Tom discussed the theory of science, but then he said something contradictory…" In this case, as the contradicting figure is not identified, it would be reasonable to draw the student's attention to this to clarify the statement, to identify Bob or Tom (or an unmentioned third party) as the relevant point of reference.

### 4.4.2        The moderator role

The moderator role was to monitor behavior on the website to ensure that best practice was applied and that participants were behaving in a manner appropriate to the section and each other. At the first level, this was to ensure that academic topics remain on-topic (so should a student ask a question it does not discuss a different one or fail to address the question asked) or that posts made in the more social aspects of the website did not become inappropriate or unpleasant for anyone – joking within reason would be acceptable, but any socially divisive behavior such as sexist, racist, or bigoted remarks were primed to receive the stated warnings and potential suspension from the service per the methodology. All

participants were to be treated equally, both by the primary researcher and by each other. In a best-case scenario, the group would be self-regulating after normalising into use of the service, with the moderation being applied lightly to maintain a topic, if at all. The context of research philosophy would be a less intense version of the action research, pulling back from active support but still being present to act as required.

### 4.4.3        The facilitation role

This role operated both internally and externally of the site. Outside of the support participants may have sought on-site, they may also have required guidance on administrative issues, both in relation the Student Jam project and to their own studies. These may be requests for advice on how to file an appeal over an exam result or a question about the project. This role operated in effect to anything outside of the participants work, and potentially required the most flexibility in terms of time and energy as questions to which the primary researcher didn't reasonably have the answer for would require investigation.

As student needs become more explicit and usage more frequent, the framework may require a shift towards specialised, subject-specific curriculum design where students can and will be empowered to support each other through their course-related work. Needs assessment can to this end be performed both by using focus groups during the pilot phase and by enquiry through the system periodically thereafter. This facilitation may require

anything from sourcing support from within the group, recoding the website, or indeed any manner of adjustments as stated by the participants.

Should the site at any stage reach a point where participants became self-advocates or active stakeholders who would in turn seek to run and operate the site themselves, the overall role of the primary researcher would itself devolve to this role only, enabling participant requirements, observing the behavior, and ensuring best practice. A function of training might also be required in this state to ensure that the stakeholders are themselves informed, aware, and trained to run aspects of the site itself. While the master controls would remain with the primary researcher throughout, they would have the option of receiving up to full administrative powers over the site. In this instance, daily back-ups of the site would be made rather than weekly or monthly as a precaution for multiple administrative powers in case of an accident. The philosophy of research at this stage, while retaining elements of the action research, would be more a modified ethnography.

## 4.5        On-Site Methodology

In the network/website itself, the primary investigator would act as previously stated as a facilitator, promoting use of the system and contextual support which will be phased out as interaction between the network users increases. This role will be scaled back to that of a moderator ensuring that there is no abuse of the system or the users, and to be on hand as

unforeseen or undesirable situations arise. During this period, students would be encouraged to engage with the peer-support network rather than rely solely on hierarchical systems, transforming them into active stakeholders. In order to better involve participant interaction, an open invitation to critique the network was offered, both at the initial contact with participants and on the site itself. This in principle would allow participants a greater degree of agency and involvement with the project, and in turn support their transition to stakeholders.

At the outset, a period of up to 8 hours would be given by the primary researcher each day to support participants (as this would fit the traditional 40 hour working week). The website was also monitored over weekend, with time given on an ad hoc basis as required. Were this to become excessive, a scaling of the work based on peak times over the overall week would be used to scale a new schedule for the primary researchers engagement. The website would be checked daily, in the morning at 11 am, following lunch around 3pm, and also at 7pm to 8pm to allow for any participants who would work from home at the end of the day.

Performance metrics and learning analytics were used to record and analyse student behaviour and interaction with and within the system: their usage, uptake and progress. Cyber-ethnographical and netnographic methodologies were also useful in this regard (Ward, 1999; Browne, 2003). Due to the acknowledgement of both the social and medical models, a mixed methodology approach was necessary: qualitative and quantitative data

were sought respectively, based on the data provided through the network and also through feedback from and debriefing of the participants over the course of the study.

## 4.6          The Data Gathering Phases

The data gathering was broken into two phases, distinct for the study but effectively invisible for the participants. The first phase, hereafter referred to as the pilot phase, operated from late October 2011 to mid-January 2012, providing three months of data; the second phase, hereafter referred to as the main phase, began immediately following the end of the pilot phase until the end of May 2012. The main phase was seen as the prime data gathering phase for the project, while also acting on participant recommendations for changes to the service.

An optional phase of data collection was left open to run from June 2012 to September 2012. This would allow for any students repeating exams or with Summer work to seek supports which would not traditionally available during this time. This data would however be considered ancillary as opposed to a crucial collation of data. This period would also be left open to complete the final feedback questionnaire for the project at a time and pace that suits the participants while not impacting unduly on their non-academic lives.

**4.6.1        Pilot Phase**

The pilot phase had, outside of student support, two key objectives:

- Recruitment.

    o  Gathering and building the initial core group of participants

- Feedback.

    o  To test the site with the participating SLD population directly and gather feedback which could be used to tailor the site for all participants benefit within the main phase rollout.

A single third level education institute was selected for the pilot phase of the research, in this case the institute of study used by the primary researcher. This would allow for both a greater degree of observation and control over the rollout of the project, with the potential to adjust on-site advertising and engagement methodology as requested or as would be appropriate.

**4.6.1.1       Questionnaire Design**

At the end of the pilot phase, a one-page questionnaire was sent to all participants asking them to grade their feelings on the website and supports offered. In order to avoid conflicts of timetables during exams, minimising time required over time off, or the resumption of studies, this was the most practical option as, much like the site, participants could complete it in their own time and without having to make an appointment (as might be

required in an online interview) or make a journey (in the case of a face-to-face interview, for example). As the questionnaire option is less invasive, it would also allay any potential feelings of obligation for the participants, minimizing social unease or visibility, and also giving them an easier option to decline to respond to, should that be their preference. The questionnaire would in turn also be more appropriate for compliance with the ethical research clearance granted by the Ethics Approval Board. Should any participant at this stage wish to meet to discuss the project and any concerns they have, a face-to-face or online interview would be acceptable and within the remit of the ethical clearance.

Used in conjunction with any feedback provided earlier, any feedback would then be applied to the main stage. The one-pager was broken into two sections:

- A quantitative section gauging the participants feelings on Student Jam as a website using a Likert scale.

- A qualitative section gauging participant feedback using open self-report questions.

In the first section, four topics were to be rated over eight options to gauge rigour, with rephrasing used to mask this (as in Table 4.1):

| Brand | Flexibility |
|---|---|
| Design (how it looks) | Easy to access |
| The information provided | Options for adjusting the site to your preference |
| **Form** | **Support** |
| Fitness for purpose | The level of support offered |
| Easy to use | Overall usefulness |

**Table 4.1          Pilot Phase questionnaire breakdown for section 1**

The second section was left relatively open so that participants could volunteer as much or as little information as they wished. This had the advantage of not placing undue pressure for information on them, while also giving them an opportunity to vent as much as they might need or want. The seven questions in this instance were kept simple to solicit feedback, and as in the previous section were phrased to gauge rigour of response:

| Rate the site | Usage |
|---|---|
| What did you like about Student Jam? | What would make you use Student Jam more? |
| What did you dislike about Student Jam? | What would make you use Student Jam less? |
| **Site Adjustments** | |
| What would you like to see added to Student Jam? | |
| What would you like to see removed from Student Jam? | |
| What would you like to see changed in Student Jam? | |

**Table 4.2          Pilot Phase questionnaire breakdown for section 2**

The questionnaire model is included in the appendices.

### 4.6.2        Main Phase

The main phase would have all requested adjustments made within reason (a request for the colour scheme to be changed would be applied, for example, while for practical and brand purposes changing the name of the site would not).

This phase had two options for operation – either as a single institute-based study, or should more participants be required, either due to low uptake from the initial institute or to increase traffic to a point of capacity for the primary researcher to be fully engaged for an 8 hour period of support, then the option to expand the sample catchment to that of multiple institutes (subject to their acceptance) would be engaged.

The function of the primary researcher would remain much as it was during the pilot phase. Interaction on-site continued as established, albeit with the addition of 'promotional' posting: this involved starting threads and discussions on a weekly basis to enable participants to join in as they pleased. These posts would typically look at options useful for students, such as online learning resources, links, and supports. The method of meeting students, acquiring informed consent, and handling their questions and comments also remained unchanged as per ethics approval requirements.

**4.6.2.1          Questionnaire Design**

As discussed in 4.6.1.1, a questionnaire was the primary means of receiving feedback from participants. In addition to the stated issues in regards to avoiding any sense of obligation being placed on the participants, as well as remaining within the parameters of the ethical clearance, the end of the academic year would mean that participants would be less available due to their lives outside of the academic environment. With the varied finish dates dependant on when a participant's final exam was held, as well as their own need to relax after an intense period of work, a questionnaire would give them more flexibility to complete at their own pace, and with minimal interference to their non-academic lives.

The final survey was built to be more robust and detailed than that of the pilot phase survey. This final survey was composed of 50 questions, looking at 4 key areas (as indicated in Table 4.3):

- Non-identifying demographic information

- Experiential factors

  o Technological, particularly in relation to ICT and social networking

  o Academic

- Their Student Jam Experience

  o The personal opinion of the participant

  o Usage

  o Feedback

- Their overall academic experience

Rather than tie directly into the prior questionnaire, these areas were selected in order to gauge the overall participant experience, measure against behaviour noted during the pilot phase and also to gain closing feedback. Additionally, the opportunity was taken to gain a comparison of Student Jam to other on-campus supports currently available. The questions were a mix of closed questions and scales, as well as open self-report questions. These questions were varied so as to maintain participant interest and to avoid repetition. Questions were also repeated through rephrasing in places to test for and ensure rigour in responses.

| Demographic information | |
|---|---|
| What is your gender? <br><br> What age are you? <br><br> Do you live in a city/town/village/countryside <br><br> What year are you in? <br><br> What campus are you on? <br><br> Where do you have internet access? | |
| **Technological experiential factors** | **Academic experiential factors** |
| Would you describe yourself as experience with computers? <br><br> Would you describe yourself as experienced with the internet? | Do you enjoy college? <br><br> What do you like/dislike most about college? <br><br> Do you feel that college allows you to achieve your goals? |

| If so, which social network sites do you use?<br><br>Do you own any of the following? (technology) | Are classrooms distracting?<br><br>Do you have trouble meeting deadlines?<br><br>Do you have trouble with your workload?<br><br>Do you prefer to use computers in the classroom?<br><br>From most important to least, how would you rank these in importance? (planning/discipline/methods/evaluation) |
|---|---|
| **Rate the site** | **Usage** |
| Did you like Student Jam?<br><br>Did you like the idea of Student Jam?<br><br>What did Student Jam do right?<br><br>What did Student Jam do wrong?<br><br>What would you have liked to see added in Student Jam?<br><br>How does Student Jam compare with the supports you receive in college? | Did you feel like you could make a request or post on Student Jam?<br><br>What makes you use a website more frequently?<br><br>What makes you use a website less frequently?<br><br>Did Student Jam being moderated by someone without a Specific Learning Difficulty (SLD) affect how you used the site?<br><br>Would you use the site more if it was run by someone with an SLD?<br><br>If this project was expanded nationwide, would you use it? |
| **Site Adjustments** | |

What would you like to see added to Student Jam?

What would you like to see removed from Student Jam?

What would you like to see changed in Student Jam?

If a new student support website was created, what would you like to see in it?

What kind of supports would you like to see, either offline or online? [see also Other service]

| Other (Academic) Services |
| --- |
| Do you use the supports that are already available in college? If so, which ones? |
| Do you think that they could be based online? |
| What kind of supports would you like to see, either offline or online? |
| Would being provided with an introductory package of information about supports at the beginning of the college year be useful to you? If yes, what would be useful to have in this pack? |
| Is there any department you feel should do this? Please list as many as you like. |
| How do these supports compare with those you receive elsewhere, such as in work, secondary school, or other locations? |
| Do you feel that you get adequate support from : (classmates/lecturers/school/disability office/student union) |
| How well do the classes at WIT meet your learning needs? |
| How does WIT compare with other education institutes to you have been to? |

**Table 4.3          Main Phase questionnaire breakdown (qualitative)**

To conclude the questionnaire, a Likert scale ranked over 5 points – Strongly Agree, Agree, No Opinion, Disagree, and Strongly Disagree – was used to both rate and compare the service with similar external services and to act as a measure of rigour for prior lines of questioning (as indicated in table 4.4).

| Academic Experience | Student Jam Experience |
|---|---|
| Other students and lecturers respected my needs. | Student Jam respected my personal rights and needs. |
| People understand and facilitate my SLD. | There was a friendly feeling between users on Student Jam |
| WIT does not help students with SLDs. | I know exactly what is expected of me on Student Jam. |
| The structure in WIT allowed me to learn and discover new things. | I was happy to spend time on Student Jam. |
| WIT is just a place to study and is separate from my personal interests. | I did not have enough time to use Student Jam during the year. |
| The needs of the institute were more important than my own personal interests. | It was easy to access Student Jam online. |
| Overall I am satisfied studying in this college. | Student Jam is well-organised and designed |
| Students with SLDs need to take charge of their education. | Student Jam is a good place for learning and personal development. |
| I am often expected to do things that are not reasonable in college. | The Student Jam team was interested in helping me. |
| | Student Jam frequently did not help me. |
| | Overall, I am satisfied with the support offered by Student Jam. |

**Table 4.4          Main Phase questionnaire breakdown (quantitative)**

**4.7**            **Recruitment**

**4.7.1**          **Selection Criteria**

As stated in section 2.2.8, all potential participants must have a confirmed Specific Learning Difficulty (SLD) which impacts upon their cognitive domain or their ability to learn and perform at a normative in an academic environment due to their condition.

**4.7.2**          **Exclusion Criteria**

Students who are not vetted by the disability office in Student Life and Learning as having a Specific Learning Difficulty would be ineligible for the service. Additionally, students who were assigned to the primary investigator in their role as a Learner Support tutor must also be excluded in order to not confound data and findings or risk exerting undue pressure on participants to join or continue with the study. Subject to agreement with the disability office, a student assigned to the primary investigator for learning support who wished to participate in the study can request to be transferred to another learner support tutor where possible.

**4.7.3          Recruitment Process**

Students were made aware of the study and the opportunity to participate via advertising

materials such as posters and fliers which were placed and distributed through the two

campuses of the Institute. All actions by the primary researcher in this regard were

structured to adhere to WIT guidelines.

**4.7.4          Advertising on-campus**

For recruitment, advertising materials such as posters and fliers were placed around high

footfall areas on-campus to generate student awareness. These locations included the

individual school offices and areas, the libraries, and hallways. A selection of location

photos can be found in the appendices.

Direct contact with and solicitation of the SLD population for the project was both

inadvisable, at the risk of skewing data, and would be in violation of ethical standards and

approval. Acquiring such data from any institute agency was also impossible under national

data protection legislation (Data Protection Commissioner, 1988, 2003). Instead, the

aforementioned advertising materials contained information on the project and the contact

details of the primary researcher, as well as 'tear-off' portions which detailed the contact

information in short that students could take with them.
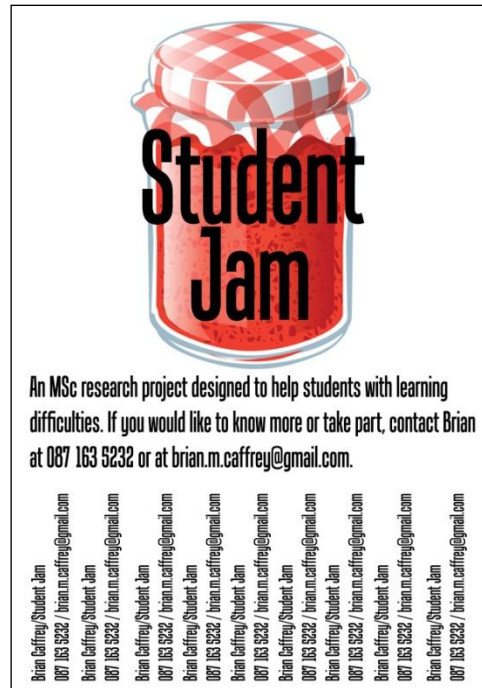
**Figure 4.11          The original advert poster design**

The initial poster was kept simple and to the point, with the central jam jar motif as the visual draw. Information was kept short in order to not overload readers with information and to touch upon the established supports with phrasing used by on-campus services. A minimal amount of information was also pursued from a security and privacy perspective to prevent non-applicable students from locating the website and attempting to gain access.

For the main phase rollout, and based in part on both participant feedback and information communication needs, the following poster redesign was used:
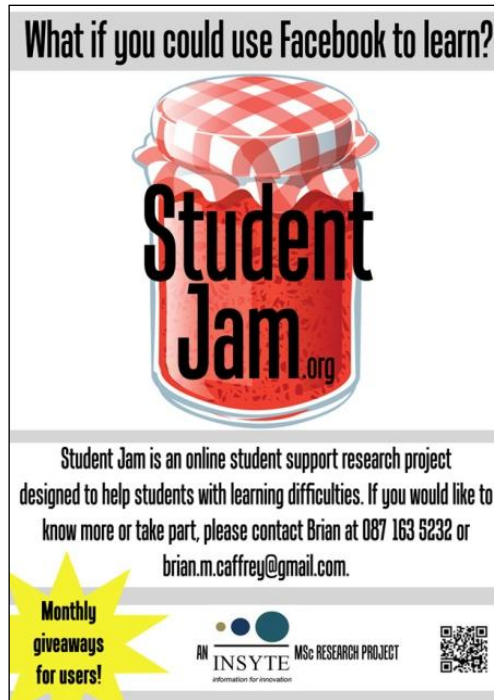
**Figure 4.12        The revised advert poster design**

The tear-off section was removed both due to the lack of use in the prior iteration and to have more space to share information on the poster itself. As a compromise, a QR code was used in place of the tear-offs – this would bring anyone who scanned the code directly to the About page on the website.

The increased space was also used to add in additional information such as the incentives scheme and to also add the research group logo. Text on the advert itself was also adjusted to more clearly establish the project and aims, while also removing extraneous information from the prior iteration.

**4.8**                **Ethical Concerns**

The primary ethical concerns in regard to this research were the protection of the participants, their data, and their anonymity, as indicated in section 2.3.7. In order to ensure the suitability of the project and to maintain absolute transparency at all levels, ethical approval for the project was sought from the Ethics Approval Board at Waterford Institute of Technology,

Ethical approval for the research was given by Waterford Institute of Technology (WIT) in May 2011.

**4.8.1**                **Informed Consent**

In order to participate, students would need to contact the primary researcher to arrange a meeting at a time and a place of their choosing, both to discuss the suitability of the support and to give their informed consent to participate. The only caveat to the meeting at the outset was that the location would need to be on one of the two official campuses located on the Cork Road and on College Street. In anticipation of any student who might be going on placement or engaging in distance learning, a short telephone discussion and email confirmation could act as a meeting in its stead. The latter option would prove useful should the need for participants require the project to expand the catchment area from a

single institute to multiple institutes (since travelling for face-to-faces constantly could prove prohibitive in terms of both cost and on-site productivity.)

On meeting participants following their voluntary first contact, the nature of the project, the process, obligations and requirements were discussed, in addition to an open invitation to request and criticise anything they want, need, and feel without risk or fear of punitive reprisal.

While email was acknowledged as an option for contact, the primary focus was placed on the website for all support requests, with email being the back-up option both for concerns and any technical issues (such as lost passwords.) As stated in section 4.3, direct contact with the participants by the primary investigator was to be minimal and mediated by the medium of the network wherever possible. If for any reason the participant felt that they could not discuss issues that arose through the network, they were allowed to make an appointment with the primary investigator to meet in person, but this was and should not have been viewed as a first resort and where possible would have a third party present.

Room was also given during the meeting to allow the participant to voice any concerns or questions, in addition to or as a result of what was so far discussed. At the close of the meeting, the participant signed two copies of the informed consent document – one copy held by the primary researcher, the other by themselves. This informed consent document also detailed in two pages and using simplified language the nature of the project, their

responsibilities to and of the participant, and all of the options available to them in regards to the project. Also included were the contact details for the primary researcher and, to allow for greater oversight, the contact details of the primary supervisor. Due to the nature of SLDs such as Dyslexia and the potential for confusion from incorrectly reading the information, the primary investigator read through the informed consent form with all participants to ensure they fully understood the purpose of the study and what it involved.

Once the forms were signed, the participant was then reminded by the investigator that they could leave the study at any point without any reprisals whatsoever. Following the close of the meeting, the participant was then issued via email and text message with a user name and temporary password (which they were advised to change at their earliest convenience). Usernames were based on their first and last name for ease of memory, with the temporary password being a musical instrument (so as to be easy to remember should they not change their password.) No temporary password was duplicated between participants. Each participant was then free to post on the website as they wished, both in requesting support and changes as they wished.

Were the participant to wish to withdraw from the study, they would be requested to sign an addendum to the consent form confirming their intention to leave the study. Again, one copy was to be retained by the primary investigator, the other copy by the departing participant. The participant would be thanked for their time and cooperation to date, and advised that they would be welcome to rejoin the project at a later date if they so wished. In

such an instance, they would be required to sign a new informed consent form in order to confirm their wish to participate again.

### 4.8.2        Data Protection

As the first security measure, all systems were gated so as to prevent parties outside of the study from interfering with the participants or generating erroneous data. This also ensured the privacy of the participants, who may not want to otherwise disclose their identities or respective conditions (the latter of which they are under absolutely no obligation to do unless they so choose in any case). Should a participant log in from a pubic computer or one that is not their own, an inactivity timer was in place so that they would be automatically logged out of the site, preventing anyone from chancing upon their account after the participant has left the computer. Additionally, should the web browser be closed, the participant would again be logged out.

All data collected was anonymised for usage in the study. Identifying or personal data was only to be used at the record keeping and management stage. Each participant was assigned a pseudonym (as will be discussed in section 4.7.4). Any reference made to individual participants during the course of the study or in documentation outside of the raw data would use this pseudonym. All data stored was to be encrypted and password-locked. These passwords were held by the primary investigator and supervisor only. The

encryption would only allow 5 attempts to access the information: after a fifth failed attempt to enter the password, the hard drive would automatically format itself and the data would be permanently erased.

Data collected was not kept whole in one location, but will be separated: usable anonymous data in one external hard drive; personal or identifying data in another hard drive (which will be locked at all times in the primary investigator's on-campus desk space). Anonymous data was also backed up in a secure cloud computing system, such as Dropbox. No identifying data was to be kept online at any point outside of the forums themselves however. Access to this data storage will be limited to the primary investigator and the supervisor. Should data be required by a third party for any reason, it would be provided on a separate USB memory key/Flash Drive. The main hard drives themselves would not be given to another party. No personal or identifying data was kept off-site at any point of the study. At no point would any data that can be used to identify individual participants be disseminated beyond what will be discussed in the next section as regards data requests.

Informed consent forms were kept together in a folder and locked in the primary investigators desk.

### 4.8.3        Data Access

Access to raw, personal or identifying data will be available to the primary investigator and supervisor only; any relevant party pre-authorised for access to confidential information regarding the participants, such as the Institute's disability officer, would also have access to this data on request to ensure transparency. In the event of the study expanding beyond a single institute, the relevant parties may request the data in regards to their own population sample, with any additional data being anonymised (so the disability office of Institute A may requesting access to information will receive identifying data of their own institute's sample, but the data of institute B would be anonymised unless there is a matter for due concern – such as bullying or abuse – in which case the permission of the officer for Institute B must be sought to identify their students.)

Anonymised thematic and statistical data can be made available to all other members of WIT staff related to the research and external examiners; any findings published or made available to the public would be wholly anonymised and without any personal, demographic or identifying information.  Raw data or metadata will not be made available to other researchers, but anonymised trend, thematic and statistical data can be made available on request to related studies. No contact details or identifying information will be shared by the primary investigator with other researchers or members of staff, with the exception of those parties indicated in the first paragraph of this section.

All data will be stored for five years; anonymised data will be kept for ten years in total. At the end of the first five years, any identifying data will be destroyed by means of fully erasing and formatting the hard drive it is stored on. The procedure will be repeated after the following five years for the remaining anonymised data.

As with the personal data on the hard drives, the signed informed consent forms will be kept for five years. After this time, they will be destroyed by shredding and subsequent burning.

### 4.8.4          Anonymising the Participants

At the outset, any discussion will have the names of the participants changed. Since this is a human-centered project, a focus should remain on the participants as people with the published names reflecting this.

Should the final number of participants be up to and including twenty, the alternate identities will be taken from the NATO phonetic alphabet. If the numbers exceed that, names will based on the third letter of their first name and anglicised if necessary. No participant sharing a name, e.g. if there be two Pauls, one would be William (based on the

old Irish spelling of Uilliam) while the other would be Humbert (from the Spanish
Umberto).

## 4.9        Conclusion

This section outlined the key aspects of the methodology, both on a philosophical and
practical level. Starting with the general structure and decision-making process in selecting
the developing the online learning environment, based on the framework as expressed in
Chapter 3, the chapter then went on to look at the codes of practice within and external to
the site, both as a method of operation for the primary researcher and as a gauge of
boundaries for participants. Ethical issues in regards to consent, privacy, and data control
were also addressed, with the focus placed on honouring and upholding the requirements of
Irish legislation in regards to data protection, institute regulations for same, and ethical
behavior in general.

While aspects of the application and expression may have required adjustments based on
the feedback and needs of the participants over the course of the study, the structure and
basis of the site, the role of the researcher, and the inherent obligations remained aligned
with what was stated here. This was necessary from many perspectives, not least of which
being structural, so as to create a sense of continuity for users, and ethical, so as to not
breach the guidelines established for the ethical approval of the work. Due to the nature of

the informed consent and the requirements of data protection legislation, any variations in

the basic functioning would also breach the agreements established with the participants

themselves and indeed their right to privacy and protection.

# Chapter Five
# **Findings**

## 5.1          Introduction

This section will present the findings on the action research overall. At the outset the findings will be separated into two sections, the initial pilot phase findings followed by the main phase findings. The data in each section are based primarily around the in-site behaviour, threads of discussion, and the feedback solicited at the end of each phase. Additional information based on initial meetings with the participants is also raised and acknowledged where relevant. The data is a mixture of quantitative ratings on the site experience and service, and qualitative data which was sought to gain meaning from the same.

## 5.2          Participant Profiles

While some interest was expressed by the eligible student population and the general student population, there were only five participants overall who elected to join the project: Juliet, Oscar, India, Victor, and Charlie. The following is a short case by case profile for each participant based on their overall engagement. A short overview of their general use

and behavior in the online learning environment is given, in addition to any additional information which can be used as context for the findings that follow.

### 5.2.1        Juliet

Juliet is a female student with dyslexia. She was undoubtedly the most frequent user of the service, and certainly the most vigourous poster. She was one of the two final year participants, and as such this might tie into her need to do as well as possible (since any results that would be received this year would be final). Of the group she would also be arguably the most self-advocating, as she was the participant who noted the inability to open the pilot phase questionnaire: following the response and revised questionnaire document type being sent, nearly all of the other participants responded with the new document type as a result of her actions. Similarly, she also responded to probing questions and responses by the moderator in order to get a more accurate response and answer to her queries. Her level of engagement was particularly interesting in that when she returned her main phase questionnaire, she declined any sort of reward – she was happy simply to help. Among her most common issues in regards to using the site was a lack of time, which can be seen as the Summer exams and deadlines approached, shifting from regular active engagement to a lower level of use. Her general behaviours on-site were polite and gracious, with any issues being noted as concluded where relevant.

**5.2.2          Oscar**

Oscar is a male student with Cerebral Palsy. As a result he is an outlier within the group as he has a visible disability by the nature of his wheelchair use, a not uncommon result of his type of condition. Oscar is an interesting case in that he was among the most positive respondents in regards to Student Jam, but he at no point actually posted or used the service as such. The main stated reason for this, as indicated by his feedback in the main phase questionnaire, was due to both a lack of time and lowered requirement to engage as he was on placement (and was in less need of project support than he expected).  Oscar was the most prompt in returning his main phase questionnaire, being the only person to do so in the initial period of incentivisation as well.

**5.2.3          India**

India was, in many respects, the most vocal of the participants. Her feedback and interactions were certainly among the most direct and forward, simultaneously being the most defensive and self-protecting – she was unique among the participant in asking about any possibility of being identified outside of the research not just within academia but in the professional world as well. Her views on the project were also the most varied, from an initial self-reported challenge of the purpose of the project, to later commiserating that more engagement did not occur. As India's SLD is relatively unique and due to this would be at risk of identifying her it will not be stated directly in this text.

### 5.2.4          Victor

Victor was the final participant to fully join and use the service, connecting with it in March of 2012. He joined the network to gain additional support for his dyslexia and was interested in the online nature of support enabling him to check in at any time that he needed. His usage of the site was however limited, posting briefly after joining in March, before ceasing all communications whatsoever.

### 5.2.5          Charlie

Charlie was actually the first person to join Student Jam. A prior user of the Academic Skills Centre operated by the disability office, she was eager to use as many options for support as possible. This was in part motivated by the tutor with whom she had built up a relationship over the previous three years leaving the position. While eager to take advantage of the service, no response was received from her following her text message acknowledging the receipt of the user login details. She also did not post on the website or respond to any further correspondence, by text message or email.

### 5.2.6          Demographic Breakdown

Of the five participants, three were female – Juliet, India, and Charlie - while two were male – Oscar and Victor. Three were second year students – Victor, Oscar, and India –

while two were students in their final year – Juliet and Charlie. Only Charlie was based on the College Street campus (and reported upon first meeting her dissatisfaction with the comparative lack of services available at this location).India, Victor, Juliet, and Oscar were all based on the Cork Road campus – while Oscar was on placement and, resultantly, off-campus for the main phase, he identified his service receipt as being at Cork Road and like his compatriots did not take issue with the presence of services (or lack thereof) there. Oscar and Victor both reported as being in the 17 – 22 age range, Juliet and Charlie were in the 23 to 28 range, and though her age was not specified India identified as being a mature student exceeding the previous age groupings.

## 5.3        Pilot Phase Findings

The initial test phase provided interesting data, albeit not necessarily outcomes which had been anticipated. The chief concern as the test phase came to a close was the low level of participation, with a smaller than expected test sample being acquired. In order to begin addressing the potential issues and pitfalls at this stage of the project, a one-page feedback questionnaire was sent to the active participants. This questionnaire consisted of two sections: the first was a Likert scale asking students to rate four aspects of the website across eight headings for purposes of rigour; the second was a self-report section directly asking students what they liked and disliked about the site, and what they would like to see added or changed.

In order to increase the likelihood of receiving feedback, all participants who returned feedback would be placed into a draw for what was initially a €10 gift voucher, later increased to €20 in order to align with the incentive scheme.

### 5.3.1         Initial findings based on pilot phase questionnaire

| Number of Respondents | 3 | Juliet, Oscar, India |
|---|---|---|

**Section 1:**

|  | Very Bad | Bad | No opinion | Good | Very Good |
|---|---|---|---|---|---|
| **Design (how it looks)** |  | 1 |  | 2 |  |
| **Easy to use** |  |  | 1 | 1 | 1 |
| **Easy to access** |  |  | 1 | 1 | 1 |
| **Options for adjusting the site to your preference** |  |  | 1 | 1 | 2 |
| **The information provided** | 1 |  |  | 1 | 1 |
| **The level of support offered** |  | 1 |  |  | 2 |
| **Fitness for purpose** | 1 |  |  |  | 2 |
| **Overall usefulness** | 1 |  |  | 1 | 1 |

**Table 5.1         Quantitative grading of the site by participants**

**Section 2:**

(Note: all answers are taken verbatim from the participant responses.)

| Question | Respondent | Response |
|---|---|---|
| **What do you like about Student Jam?** | *Juliet* | It is a friendly place to ask for some advice when stuck on college work which helps a lot |
| | *Oscar* | It is easy to use and will hopefully help me with my coursework during this semester. The social link also makes it less formal and can be a nice break from coursework |
| | *India* | It could be a great resource, |
| **What do you dislike about Student Jam?** | *Juliet* | There are to many different places to post questions |
| | *Oscar* | I think student jam can cater for the majority of people's needs because if you have a question you can just post it. |
| | *India* | It's confusing, I am not sure of its function.  The name is a bit confusing, I first thought it was some kind of home-business by students making jam, then thought it might be a music jamming  group.  As a name for a website for students with learning difficulties, I am a bit insulted by it. |
| **What would you like to see added to Student Jam?** | *Juliet* | Maybe more colour |
| | *Oscar* | Nothing at the moment very happy with the set up |
| | *India* | Resource lists, where we can find information for ourselves.  Useful contacts such as lists of people available that give grinds.  Resources that lecturers put on moodle that would be useful to other classes besides their own. |
| **What would you like to see removed from Student Jam?** | *Juliet* | I think the jam jar at the start is pointless |
| | *Oscar* | Nothing at the moment very happy with the set up |
| | *India* | The jam, the confusion. |

| What would you like to see changed in Student Jam? | Juliet | It can be hard sometimes to chosse where to write your comment so maybe have less options, for example course work etc. and I don't think the social section will be used people have facebook for that |
| | Oscar | As I am on workplacement I haven't got a chance to use it that often yet so at the moment I am very happy with the layout |
| | India | It is difficult to be honest in a questionnaire that is not anonymous. Nobody likes to tell it as it is and make themselves unpopular. |
| What would make you use Student Jam more? | Juliet | If there was hints already available on stuff without having to ask for example reference help page |
| | Oscar | I am satisfied with the way it is |
| | India | Facebook, it is always running in the background when I am studying, and any updates from student jam would be available instantly. |
| What would make you use Student Jam less? | Juliet | I like using it so nothing |
| | Oscar | It took a while to get used to the layout as I got a bit confused between the headings for example coursework and academic skills but understood them after a while. Other than that everything is fine |
| | India | I don't use student jam very much as I don't see it's usefulness. Sorry Brian for being so blunt. I thought you might appreciate honesty. |

**Table 5.2          Table of qualitative responses to pilot phase questionnaire**

In receiving feedback, some student issues became immediately obvious. While feedback on the site structure and layout was generally positive, there was an issue of confusion raised due to what was described as 'too many options' for posting. Particular sections of the forum were cited as being confusing in regards to their purpose and function.

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Participants also noted that they would prefer information they wanted to be pre-prepared and on the site in advance so that they could look for it rather than ask.

One issue came to the fore almost by accident. In order to allow for busy schedules, participants were given three weeks to return the feedback forms. As stated, a €10 gift voucher was offered, and then a week later increased to see if students would respond in kind to the higher incentive. On the day before the allotted deadline however, no feedback had been received. As part of the final push, a text message and email reminder was sent, both to remind students to return the forms and the potential of effectively winning €20 for doing so. It wasn't until that evening that a student responded that they could not open the file due to having an older version of Microsoft Office. Apologies, a compatible version of the feedback form, and an extension of four days was sent to all participants as a precaution. Following this, all but one participant responded within 24 hours to this revised document.

While on one level this may seem simply to be an issue of technical compatibility, it does seem in fact to go deeper: if that lone student had not contacted the primary researcher, would anyone have submitted feedback? Given the incentive that was on offer and the oft-stated mantra that they could criticise and discuss the project with impunity, why did no one raise the issue sooner? Considering this in tandem with the participants' statements that they would prefer to not make themselves visible in asking for information, and if we were

to look at the even broader picture of the low level of participants coming forward to take part, it might be found that it indicates deeper issues at play.

In applying the results to the established framework – brand, flexibility, form, and support – we can see how the qualitative feedback aligns with the participant's responses. There is a reasonable degree of satisfaction across the board, with two instances of Bad and three Very Bad occurring. The rating of the service varies otherwise between Good and Very Good, with Level of Support offered and Fitness for Purpose standing out in particular. It's worth noting in the case of the Bad and Very Bad that they are all from the one respondent – India – who otherwise reported no opinion for the remaining questions. It should also be noted that, although a participant since December in the pilot phase, she did not begin posting until the main phase began and the surveys had been sent out.

### 5.3.2        Emergent themes

| Theme | Number of Responses | Respondents |
|-------|---------------------|-------------|
| *Passivity* | 2 | **Juliet, India** |
| *Isolation* | 2 | **Juliet, India** |
| *Holism* | 1 | **India** |
| *Potential* | 3 | **Juliet, Oscar, India** |

| *Stigma* | **1** | **India** |
|:---:|:---:|:---:|

**Table 5.3**          **Thematic responses for the pilot phase questionnaire**

**Theme 1: Passivity.** This theme is relatively unique in that it's based on the responses – or lack thereof – to the initial survey email. Of all of the participants who experienced issues in opening the document due to using an older version of Word (discussed in more detail in section 5.2.3), only one took the initiative to say as much. Following this effort by an effective third party, the other respondents then returned completed questionnaires. Additionally, participants were slow to use the system and logged on to it minimally in the test phase. Even in the early stages of the main phase, there was little activity or contact, outside of some cursory questions which even then did not exceed asking a basic question.

**Theme 2: Isolation**. Participant preference for finding the information pre-prepared and with a minimisation of interaction indicates a preference to maintain low visibility, if not remaining functionally anonymous. Both India and Juliet requested more readily prepared information, though India also requested the presence of materials made available through other avenues, such as grinds lists (available from the Students Union traditionally) and class and lecturer resources available on the institute's Moodle network.

**Theme 3: Holism.** An interesting preference indicated in feedback relates to the integration of the project into what students already use. Several respondents indicated the redundancy

of the Social section of the forum in light of (and due to their personal preference for) Facebook. While use of Facebook had been initially avoided due to the public nature of the Pages system, its requested addition to the project is both noted and followed upon (albeit with caveats to protect student confidentiality). In anticipation of any further social network requests, a Twitter account was also preemptively established for the same purpose.

**Theme 4: Potential**. One factor that came up in all feedback was that of potential, both in the positive and negative connotations of the concept. Those who subscribed to the former viewpoint (which is also the majority view) see a high level of potential use for the project, primarily as an all-in-one resource for the information they need or expect to need.

**Theme 5: Stigma.** During the initial disclosure of their respective SLDs, some participants stated a concern in regards to any required level of disclosure that would be required of them on the network, and of any potential for the identifying information being disseminated to unseen parties. In the case of India, her very first concern – stated at the time of meeting to enroll her in the project – was that of anonymity, not just of her condition and awareness thereof as it related to her classmates and other participants, but also that of potential employers and bodies not associated with the institute. With her condition being effectively invisible, she could conceivably never reveal its existence, save where required.

As a mature student, this concern was much more overt than in any other participant, all of whom were in their early twenties at most, the majority of whom were away from home for the first time. While not presuming that India has undergone significant bias or differing treatment professionally or personally, since this was not disclosed, she was however certainly aware of the potential for bias that would emerge due to the increased levels of information availability thanks to the internet. The reassurance of absolute anonymity and no requirement to disclose information were of absolute importance to India. In many respects, the nature of her concern could lead to the theme being reconfigured to Awareness rather than Stigma – the palpable reaction to and awareness of difference.

Even in the pilot phase survey, and following multiple statements regarding the ability to state what the participants wanted, publically or privately, in regards to the project, the awareness of difference was present:

'*It is difficult to be honest in a questionnaire that is not anonymous.*
*Nobody likes to tell it as it is and make themselves unpopular.*'

While India was alone in concern for the long term impact of participation in the study, other participants did indicate issues as regards their treatment. While assurances at the initial stages at least placated the issue at least temporarily, the issue may bear an underlying effect that should be explored.

### 5.3.3          Emergent potential issues

**Issue 1: Reactivity.** As suggested in section 2.3.1, the presence of a de facto outsider moderating communication may have acted as a deterrent to participants from potentially exposing their vulnerabilities. Similarly, peer judgement, or at least the perception of it, may also be pushing participants to avoid standing out or drawing attention to themselves both within the site and even in joining it.

**Issue 2: Low population awareness.** This was among the potential concerns, since if the population was not aware they would be unable to participate. While difficult to verify – SLD students may have seen the advertising and simply not wish to participate, after all – it would bear investigation going forward.

**Issue 3: Technological limitations.** The potential of this issue stands twofold. The first and most definite is that of hardware/software. While the project was designed with the assumption of lower spec hardware and software, the issue with the feedback forms at least presents an issue to be considered. All participants had at least logged onto the network without complaint (or notification of a complaint), so at this stage the core mechanics were not an issue. Any experiential issues could potentially be present and warranted investigation during the main phase.

**Issue 4: Low cohort motivation vs. Passivity**. If the former is the issue, then the site would need to be further adjusted, and probing is required to refine it to the needs of the cohort as they are disclosed; the latter however is a more difficult matter to attend to.

**Issue 5: Activation vs. Negative affectivity**. Per section 2.3.4, the impact of negative affectivity from prior experiences may work against the nature of a network designed to operate in a thematically similar fashion. Engaging in this line of inquiry would also provide some insight into participant motivations and issues. A major indicator in this case would be the pilot phase survey responses by India which are unilaterally negative (*'It's confusing... not sure of its function.  The name is a bit confusing... I am a bit insulted by it.'*), in contrast to the more constructively critical responses from Juliet and Oscar

**Issue 6: Learned helplessness.** Following on as a continuation from issue 5, this would in effect the worst case scenario due to the long term implications it would hold for the participants. While it was to be investigated, it was also hoped that any indicators or evidence found will be outliers or circumstantial.

### 5.3.4        Patterns of investigation carried into the Main Phase

During the pilot phase, the main behaviour of participants was in using the site to ask questions directly related to what they are doing at the time (such as referencing or writing

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their literature review). Over the main data phase, observation was as a result to focus on whether participants would break out of this mode to ask less generalised, more targeted questions, or indeed to utilise other sections such as the social functions and technical support. Opening prompts to that end would also need to be posted on the site to generate discussion in that vein, but even a lack of response to these may be relevant.

Length of and detail in content posted will also bear examination: participants currently post short posts with only a few lines and bare minimum of content or line of inquiry, with probing questions by the primary researcher necessary to ascertain a more specific understanding of their issue or need. Any notable and sustained increase in length would be a positive step for site and peer interaction. Response time and reactions was also indicated as relevant to track in this regard.

Tracking participant opinions overall was to continue to have bearing on the overall success of the project. To this end, feedback was to be sought periodically to further refine the concept and open up avenues of investigation, both for the remainder of this study and subsequent research in this vein.

**5.3.5          Application of pilot phase findings towards Main Phase**

Student feedback was immediately placed into motion: the information provided, both in content and the form of the website and forums, was rewritten to make absolutely clear the purpose and function of the site, the site sections, the research, and any additional information.

In an effort to increase in-system participation, the incentive scheme was rolled out. In order to be entered into a monthly draw for the gift voucher of their choice, students would simply have to make one post a week on anything they liked, be it academic, social, or even simply a post with little or no content at all. This would at the very least allow suppositions to be made, if not outright indicators of, their motivations, engagement, and passivity.

In order to try and address the issue of low awareness, the advertising was adjusted in two ways. First, the poster was redesigned based on general feedback. The tearaway information was removed and replaced with a QR code, in turn allowing for better use of space and more information on the page. The placement of posters is also now far more comprehensive.

Furthermore, in order to test if the student population currently being targeted is an outlier or indicator of the broader population, contact was made with other third level institutions to become involved with the project. With some having already made tacit agreements to

allow their populations to participate, their behaviour in either aligning with or acting in contrast to the current sample would provide ample information.

## 5.4        Main Phase Findings

With the conclusion of the main data gathering phase, a greater view of the participants, their needs, and their behaviours became clear. This section will address both the questions raised by the pilot phase findings and also address the new data that was discovered over the course of the phase.

### 5.4.1        Posting behaviour
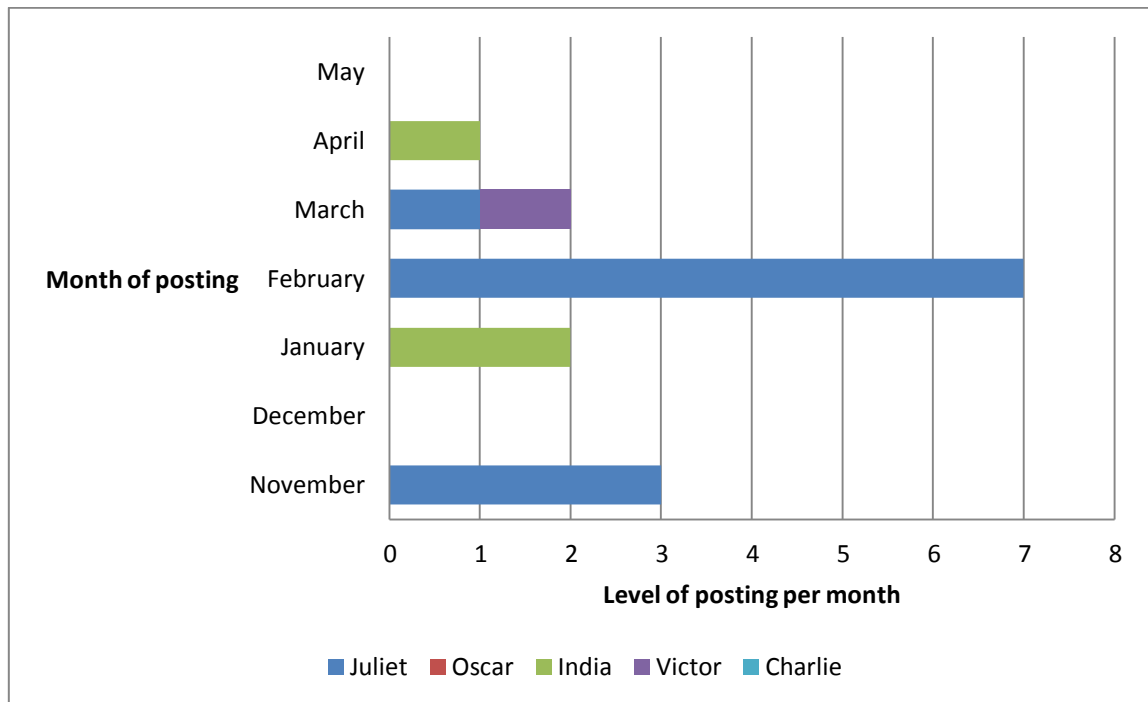


**Figure 5.1**        **Posting levels per month**

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With the application of feedback to the site and system, including the rollout of the incentivisation scheme, there was a brief flurry of student interaction for the first two months of the main phase. This however was not sustained for the full duration of the phase.

The first two months of the main phase saw half of the sample at that time engage with the site in order to qualify for the monthly draw. This usage however dropped off heavily during the month of February, with only one participant qualifying for the draw due to prolonged discussion of their at the time ongoing research work which merited some degree of back and forth, both to explore their needs and to comprehensively address the request and queries.

This engagement dropped off again over March, with no participant qualifying for the monthly draw – a single thread was started in the forums with only one participant and only one post made in the Facebook page. In order to promote usage and gain an insight into the effectiveness of incentivisation, the rollover plan was initiated, with all participants notified of the opportunity. The increased amount available to win did not however entice any potential usage, as no posts were made in the main website or forum, and only one post was made on the Facebook page. Over these months there was also no use made of the Twitter feed that had been set up.

A second rollover was run in May, and due to exams a reduced time frame necessary to post was also included. Exam-based prompt threads were started by the primary researcher both to invite participation and use of the site. This however did not see any post activity run over this period, and in fact no posts were made on any part of the Student Jam network.

Responses to the end of year survey were also slow to be returned: irrespective of the prime period to gain the best participation reward for returning a completed survey, only one participant – Oscar – returned the survey on time by the end of June. By the end of July, no surveys had been returned. This trend continued with the further reduction of the incentivisation and, by the middle of August, still no further surveys had been returned. Per the methodology, a 'restored' full reward was applied and a new deadline was applied for the end of the first week of the new semester. All participants who had not returned a survey were notified. Two participants – Juliet and India - responded positively by text message to the news, but of the two only Juliet returned a completed survey.

### 5.4.2        Questionnaire Responses

Due to the significantly longer nature of the main phase questionnaire, the reporting is broken up based on the areas addressed in each, with key notes after each section. As in section 5.3.1, all self-report questions are presented verbatim.

### 5.4.2.1        Technological experience

| Technological Experience | Respondent | Response |
|---|---|---|
| **Would you describe yourself as experience with computers?** | *Juliet* | No |
| | *Oscar* | No |
| **Would you describe yourself as experienced with the internet?** | *Juliet* | Yes |
| | *Oscar* | Yes |
| **Would you describe yourself as experienced with the Social Networking Sites?** | *Juliet* | Yes |
| | *Oscar* | Yes |
| **If so, which social network sites do you use?** | *Juliet* | Facebook, Bebo |
| | *Oscar* | Facebook |
| **What makes you use a website frequently?** | *Juliet* | If I enjoy using it |
| | *Oscar* | If I get stuck on a particular topic when doing college work as I tend to use the computer less when I'm at home |
| **What makes you use a website frequently?** | *Juliet* | If layout is confusing |
| | *Oscar* | Being at home or when i'm working I tend to use the computer a lot less than I would when I'm in college. |
| **Do you own any of the following? (technology)** | *Juliet* | Mobile Phone, Smart Phone, LaptopComputer |
| | *Oscar* | Mobile Phone |
| **What campus are you on?** | *Juliet* | Cork Road |
| | *Oscar* | Cork Road |
| **Where do you have internet** | *Juliet* | Home, mobile phone, college |

| | | |
|---|---|---|
| **access?** | *Oscar* | Home, mobile phone |

**Table 5.4          Responses to technological experiential questions**

The first interesting aspect to note in table 5.4 is the distinction drawn between the medium – computers and computing – and the media – the internet and social networking sites. Both Juliet and Oscar see themselves as experienced practitioners in the social and interactive aspects, but see a skill divide in regards to the devices themselves. Juliet's comment in regards to frequent (and less frequent) use is also interesting as it goes some way to addressing the matters of intrinsic motivation – the act of doing something for the enjoyment of the act itself as cited in sections 2.3.4 and 2.3.5 – while Oscar at this stage is more extrinsically motivated – using it when he needs to for a particular purpose rather than casually.

**5.4.2.2          Academic experience**

| Academic Experience | Respondent | Response |
|---|---|---|
| **Do you enjoy college?** | *Juliet* | Yes |
| | *Oscar* | Yes |
| **What do you like most about college?** | *Juliet* | Sense of achievement |
| | *Oscar* | Meeting new people - the social aspect |

| **What do you dislike most about college?** | *Juliet* | Sometimes lectures would give un clear instructions. Or would not turn up to class. Also I received the wrong mark in one of my final modules, which I think is just not good enough at fourth year level. |
| | *Oscar* | All the assignments come at the one time or are due at the one time |
| **Do you feel that college allows you to achieve your goals?** | *Juliet* | Yes |
| | *Oscar* | Yes |
| **Are classrooms distracting?** | *Juliet* | No |
| | *Oscar* | No |
| **Do you have trouble meeting deadlines?** | *Juliet* | No |
| | *Oscar* | No |
| **Do you have trouble with your workload?** | *Juliet* | No |
| | *Oscar* | Yes |
| **Do you prefer to use computers in the classroom?** | *Juliet* | No |
| | *Oscar* | No |
| **From most important to least, how would you rank these in importance? (planning/discipline/methods/evaluation)** | *Juliet* | Planning, Method, Discipline, Evaluation |
| | *Oscar* | Planning, Method, Discipline, Evaluation |

**Table 5.5          Responses to academic experiential questions**

Their views in regards to what college can offer vary – as a final year student, it's unsurprising that Juliet is concerned with the sense of achievement , while as a second year and still relatively early on in his academic career Oscar is more in tune with the social element. There is a unanimous positive reaction towards the general experience, though there is division towards their respective issues: Juliet is heavily goal-oriented, citing frustration at what she perceives to be a lack of due diligence from staff, while Oscar is concerned with a periodic overburdened workload. In an interesting turn, both Juliet and Oscar ranked planning as the most important aspect of how they address their work, with the evaluation as the least important aspect. This would begin to indicate both an acute awareness and ownership of their respective conditions, as they prioritise how they will address their work at the outset.

**5.4.2.3        Site experience**

| Site Experience | Respondent | Response |
|---|---|---|
| **Did you like Student Jam?** | *Juliet* | Yes |
| | *Oscar* | Yes |
| **Did you like the idea of Student Jam?** | *Juliet* | Yes |
| | *Oscar* | Yes |
| **What did Student Jam do right?** | *Juliet* | Provided quick easy to understand answers to the questions asked |

| | | |
|---|---|---|
| | *Oscar* | They help with any issues a student may have with college work as the student can post their problem to the tutor or other students. Student Jam gets the information to them directly and focuses on the students specific problem |
| **What did Student Jam do wrong?** | *Juliet* | Website was a little difficult to understand. For example all the different forums were confusing |
| | *Oscar* | Nothing as far as I could see. Personally I would have liked to use it more myself last semester but I was on work placement. I will definitely use it more when I am back in college next year. |
| **Did you feel you could make a request or post on SJ?** | *Juliet* | Yes |
| | *Oscar* | Yes |
| **What would you like to see added to Student Jam?** | *Juliet* | Simpler lay out. And more pictures |
| | *Oscar* | I was very happy with student jam the way it was |
| **What would you like to see removed from Student Jam?** | *Juliet* | Nothing |
| | *Oscar* | I was very happy with student jam the way it was |
| **If a new student support website was created, what would you like to see in it?** | *Juliet* | Easy to use, friendly, confidential |
| | *Oscar* | I am very happy with student jam. If the new website had the with the same type of layout as the existing student jam it would be a help as it is easy to follow |

**Table 5.6          Responses to site experience questions**


Neither Oscar nor Juliet's opinions of the network and service changed radically between the pilot phase and the close of the main phase. The feedback as a result touches on a lot of the same features as the initial findings – a layout further simplified being the most critical aspect (rather than the redefinition and clarification of the areas that were present). It's

interesting that at this juncture the reiteration of privacy is highlighted by Juliet, the party
with the invisible condition. A key element is that both look at the site as service provision
for the individual, rather than a group interaction (though Oscar does mention the peer-
aspect in passing).

## 5.4.2.4        Other academic services

| Other academic Services | Respondent | Response |
| --- | --- | --- |
| **Do you use the supports that are already available in college? If so, which ones?** | *Juliet* | Tutors in Academic Skill Centre |
| | *Oscar* | Student Life and Learning, scribe and extra time in exams. |
| **Do you think that they could be based online?** | *Juliet* | No |
| | *Oscar* | No |
| **What kind of supports would you like to see, either offline or online? (Selection offered)** | *Juliet* | Additional Tuition, Academic Support Tutor, Weekend Support, Additional Seminars, Group Training sessions, One-to-One training session, Learning Support classes, Subject-specific support |
| | *Oscar* | Additional Tuition, presentations |
| **Would being provided with an introductory package of information about supports at the beginning of the college year be useful to you? If yes, what would be useful to have in this pack?** | *Juliet* | All the supports available and how they can help me |
| | *Oscar* | A flyer for new students with certain supports available to them or a list of peoples' names they could contact if they needed help. |

| Is there any department you feel should do this? Please list as many as you like. | *Juliet* | Each students own subject department |
| | *Oscar* | No |
| How do these supports compare with those you receive elsewhere, such as in work, secondary school, or other locations? | *Juliet* | I have never received any other supports before third level. However, UCD do not mark dyslexic students on spelling in assignments as well as exam, a factor that should be considered in WIT. |
| | *Oscar* | They are excellent nearly better as they have an idea of the support you may need |
| Do you feel that you get adequate support from : classmates / lecturers / school / disability office / student union | *Juliet* | Yes: Classmates, Disability office<br><br>No: Lecturers, School, Student Union |
| | *Oscar* | Yes: Classmates<br><br>No: no answer given<br><br>No reply: Lecturers, Disability office, School, Student Union |
| How well do the classes at WIT meet your learning needs? | *Juliet* | Poor |
| | *Oscar* | No reply |
| How does WIT compare with other education institutes to you have been to? | *Juliet* | Poor - The support outside of class is very good. But support in class in very poor as lectures can be unclear. |
| | *Oscar* | Very good - The extra help they offer students is brilliant and should try to be kept to give everyone at WITa chance to achieve their goals. |

**Table 5.7          Responses to other academic service questions**

A greater level of experiential dissonance is reported at this stage – Oscar reports a

generally positive response to all supports, while Juliet notes dissatisfaction with class- and

school-based supports (but is otherwise positive and happy with the resources available).

Student Jam in this instance as a support mechanism would compare favourably from both

the tone and statements above.

### 5.4.2.5        The academic experience and Student Jam

The responses were quite split in regards to the institute, with the only factor agreed upon

being that WIT as an institute does support students with SLDs. The participants were

divided on how the institute understood, facilitated, and respected SLD needs: Oscar,

whose condition is visible, felt the needs were met, while Juliet, whose condition is

invisible, did not. The topic of the institute being a place of study saw a reversal of

disagreement between the respondents. In this case, it is actually Oscar who agreed it was a

place of study only, while Juliet strongly disagreed. This may continue the thread of

investment that Juliet has developed over her longer period of study (and that as a final year

student everything would be geared towards achievement in that regard). Overall and from

an institutional perspective, both parties are happy with their experience. When directly

addressed on the matter, they were also in agreement that self-advocacy and ownership is

essential, continuing the prior indication of the need to plan and develop methods and

strategies.

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By contrast, there is near unanimity in regards to Student Jam itself as an experience. While

it would be a simple (and tempting) option to see this a ringing endorsement there are a

number of factors that need to be considered in addition to these findings: the reactivity effect, as cited as a potential issue in section 5.3.3, may be at play in the opposite direction, with participants aware of their being observed and answering in a way that they think may be suitable as opposed to being genuine. Even taken at face value, there would be a significant bias due to the low numbers and should not be taken as iron clad evidence outside of case study view. Certain statements such as 'There was a friendly feeling between users on Student Jam' were agreed upon even though there was no actual interaction between any participants, only between the individual participant and the primary researcher. Anything that was suggested in regards to their individual experiences – how they felt about their needs being respected, knowing what was expected of them, and their satisfaction in using the site - could be considered at least reasonably true, though further investigation to confirm this would be preferable.

**5.4.3          Looking at incentivisation**
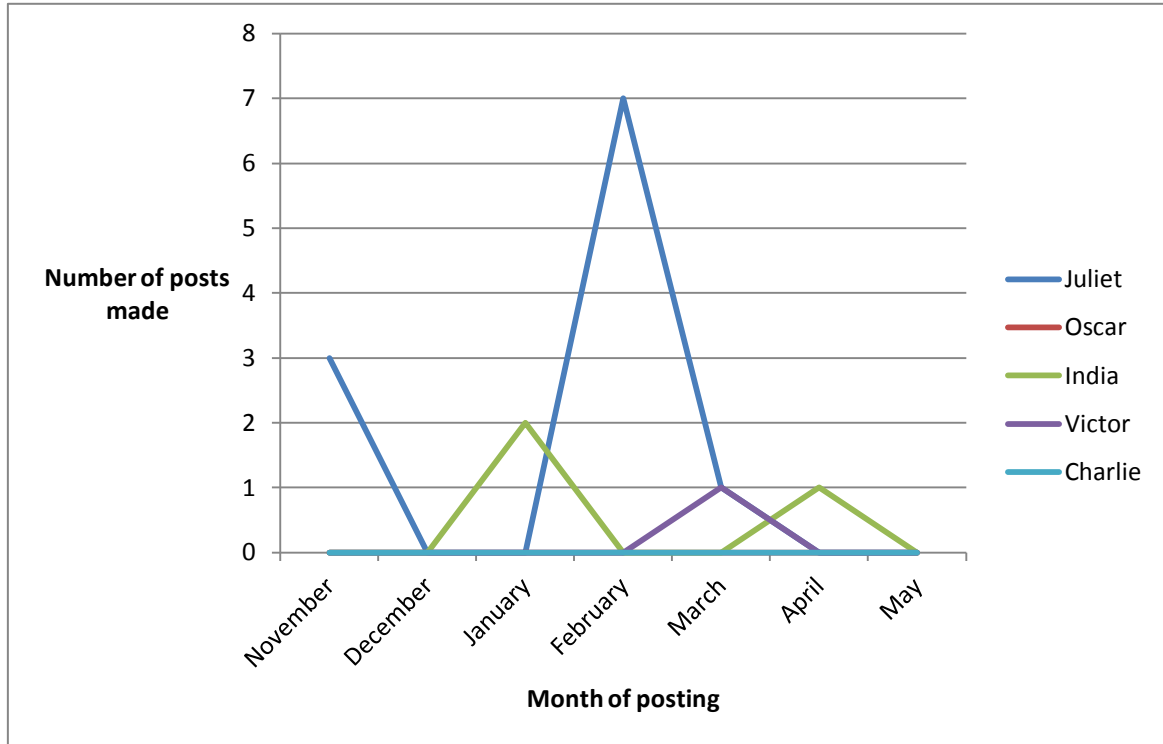


**Figure 5.2          Posting behaviour throughout the phases**

While figure 5.2 indicates that there was a surge in posting following the launch of the incentivisation scheme, particularly in the month of February, this was not sustained for the duration of the main phase. Contrary to this in fact, we can see that posting drops to a low not seen since December (when both exams and Christmas holidays occurred) and returns to a point of stasis by May (again, when exams occurred and followed shortly thereafter by Summer holidays.) While the site was left open and operational over the months of June to September, there was no further posting made.

On the basis of figure 5.2, the uptake, and the usage of the site, there are two ways that the incentivisation can be viewed:

1. That it was unnecessary as participants would (not) use the site irrespective of its presence

2. That it was not of a high enough value or utility to the participants to pursue in and of itself

Student responses do not directly indicate in the direction of the latter – in a positive turn of sorts, the incentivsation wouldn't be necessary under normal (or future) circumstances. India, a party critical of the project and site in the pilot phase, stated in her final post on the network that

> "*It's a pity that people haven't gotten involved. I dont know about everyone else, but it's been a really busy semester*"

This view is supported by both Oscar and Juliet in the Summer survey feedback: time to use the site was greatly reduced due to the level of work involved with their curricular activities (particularly for Oscar, who discussed how his being on placement severely hampered his free time to use the site and hopes to use such a service when on-campus again in the following semester.) Furthermore, when asked what voucher she would like following the submission of her final survey, Juliet responded that

> "*I dont need a gift card was just happy to help :)*"

While it's not unexpected that participants would accept any bonus or reward offered, particularly if they are of a higher caliber than that on offer in the course of this project, it is at least a potential consideration that incentivisation may not strictly be necessary to build the user sample: the support in and of itself may be the more valuable aspect to promote and pursue. The lack of engagement by the cohort following the application of the monthly draw scheme coupled with no statements made in any feedback, discussion, or response, indicates at the least a lack of interest in any level of fiscal, proprietary, or monetary gain.

One interesting contrast that might prove worthy for later study and investigation would be to see if an academic bonus applied would increase engagement. There would in this be the need to mitigate concerns of equity and fairness – under the auspices of this research project for example, such an incentivisation would be inappropriate as it could potentially go beyond the equalizing intent to instead give an actual and overt advantage to participants over non-participants. Since that would include all normative students as well as non-participating SLD students, it would be disproportionate and unbalanced at best.

### 5.4.4        Reexamining the themes

In addition to the shirting perspective as regards the incentivisation, the participants responses gave cogent and insightful data towards the then emerging themes as discussed in section 5.3.2.

**Theme 1: Passivity.**

While on the surface the lack of posting may indicate a passive nature, this would actually stand in contrast with the participants stated lack of time. Under any reasonable circumstances, and giving benefit of the doubt, the students first and foremost would prioritise their work for deadlines (and aligns with participant response in section 5.4.2.5). While the schedule for this may vary – some may plan to do the work piece by piece over time, while others instead undergo a flurry of work just before a deadline – the participants did at least assume ownership over their work and conditions, irrespective of how much they may act upon this ownership. Both Oscar and Juliet agreed that students do in fact need to take charge of their conditions in their survey responses, with Juliet in particular citing that she would often need to pursue information more consistently due to the varying clarity of information in-class.

The stated lack of time, both during the main phase and in the returned feedback, at least suggests that while participants were relatively passive as regards Student Jam, they did at least focus on their own work individually (the most important aspect of their academic careers in any case or situation.)

**Theme 2: Isolation**

While the requests for pre-prepared information did not increase – participants in fact sought more direct information that would not be possible to pre-prepare, in fact - the lack of active participation on-site as the semester went on made it more difficult to ascertain if this was due to not wanting or being inclined towards asking for support, or if indeed it was

an unintended consequence of the lack of time cited above to participate in either direction.

India's initial statement in regards to what support she might need:

> *'I am worried about using photoshop… because of my short term memory problems it takes me quite a while to get used to the tools available. I am worried that scheduled class time wont be enough…'*

And reasons for asking…

> *'I could be worried about nothing, might just be a fear of the unknown. I'll know better after a couple of weeks. I just wanted to put myself at ease and know what options are out there before things do become a problem…'*

… followed by her later post on Facebook

> *'It's a pity that people haven't gotten involved. I dont know about everyone else, but it's been a really busy semester'*

… certainly indicate that having the option there and not needing it rather than needing it and not having it may suffice in that regard.

**Theme 3: Holism.**

While the need to integrate the site into what the participants had already made a part of their digital lifestyle, once the efforts had been made and applied they were little used. India, who has in particular requested the integration of Facebook, only posted once on the Facebook page. Even then, this post was not in search of any support that she had

previously indicated on the main message board but rather was a commiseration of sorts that the site and project had not seen a greater uptake (particularly interesting and relevant given her original feedback on the project in the pilot phase survey as not being able to see the point.) Interestingly, Victor's only post was also on Facebook – while he did post to ask about how everyone had found the project so far, he received no replies and did not subsequently post again or engage with the service in any way.

**Theme 4: Potential**.

The potential for support remains an ongoing positive note for all participants – even India, who stated quite distinctly in her pilot phase survey that she felt the site to be pointless, regarded the lack of interaction as unfortunate. Juliet and Oscar both continued to regard the site positively, in concept and (though not in all manners of) execution. While Juliet thought the website could be *'a little difficult to understand'* she did not feel limited in what she could or could not post, and was herself the most frequent user of the service in spite of her reservations. While she suggested a simpler and more streamlined interface, she saw nothing that she wished to see removed outright. Oscar by contrast was even more positive, and indicated that if a

> '*new website had the with the same type of layout as the existing student*
> *jam it would be a help as it is easy to follow.*'

Expansions to the concept were also welcome – when asked about the option of expanding the concept to a wider grouping of institutions, or indeed bringing the project to a national scale, Juliet and Oscar were both in favour.

**Theme 5: Stigma?**

While the initial expression of this theme was labeled Stigma, it might be more accurate following the responses to repurpose it into being Awareness (of difference) or indeed as Difference. The visibility of the condition seems to be the key component of how isolated the participants feel. As stated in section 5.3.2 in regards to India, her immediate concern was of anonymity and visibility, professionally, academically, socially, and personally. With her condition being de facto invisible, she could conceivably never reveal its existence, save at her discretion or when absolutely necessary. This concern, and her position as the only mature student participant, put her in distinct contrast with the other Student Jam members. As suggested in section 5.3.2, the reassurance of absolute anonymity and no requirement to disclose information were of absolute importance to India, feeding into the potential to redefine this theme as Awareness rather than Stigma – the palpable reaction to and awareness of difference. While India was alone in concern for the long term impact of participation in the study, other participants did indicate issues as regards their treatment.

Juliet was quite vocal as regards her issues with supports in the institute – while satisfied with Student Jam and happy with the efforts of the disability office, she was less praising of the academic supports outside of these avenues. Of particular note was her issue with lecturer and school support, both of which she ranked as Poor, primarily due to lack of clarity. As a dyslexic, she also felt that the condition was not actually understood or supported outside of the established areas of positive support. She was however more in favour of peer support, as she indicated that the site being moderated by a party with an

SLD would likely improve her likelihood of using this site (though the lack of this would not stop her outright).

In contrast to both of the above, Oscar felt that he was facilitated adequately. His cerebral palsy meant that he was a wheelchair user and, as such, would not be able to hide his condition. In contrast to Juliet, Oscar felt supported, with all parties he engaged with being supportive and understanding. There are some obvious observations that can certainly be made from this – unlike India, Juliet, Charlie, and Victor, all of whom have perceptual and de facto hidden conditions as opposed to visible overt conditions, Oscar's needs legally require facilitation on physical and health and safety levels. Adaptations for wheelchair use means that at the outset, many needs will be met irrespective and without a need to apply. Even were he not to apply for additional supports, he would automatically have supports in place. They may not be there purposefully or specifically for him, but they are present nonetheless as an inalienable right. The other participants, meanwhile, must go through several processes internal and external to the institute in order to gain any institutional supports, all of which would have a limited range of application.

The lack of condition visibility would also give way to basic human behavior – if nothing is overtly wrong, a person's actions are not likely to be different. A condition being visible means that there would at least in theory be some action taken – someone may give up their chair on a bus for a visibly pregnant woman or someone who looks old, but someone lightly pregnant or not obviously in their sixties or seventies may not receive the same courtesy. The same could be said to apply here: even without disclosure, the wheelchair is

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an obvious indicator which can be supported; dyslexia is not overt or obvious to basic observation, and may not be supported in kind as a result. Oscar's condition is accepted at an observable level, reducing the state of difference, while the respective conditions of Juliet, India, et al. are not observable and their awareness of difference, along with all of their concerns and frustrations from same, are increased.

### 5.4.5        Reexamining the issues

The participant responses also went significantly towards addressing the issues and concerns that emerged in the pilot phase, as discussed in section 5.3.3.

### Issue 1: The reactivity effect

Both Oscar and Juliet advised that they had no issue with the presence of a non-SLD tutor on-site, though it is notable that Juliet, whose dyslexia is an invisible condition, admitted she would be more likely to use the service were it operated in a peer-support fashion by a tutor with an SLD. Oscar, whose condition necessitates a wheelchair and de facto visibility, suggested he was no more likely to use the service were it run by such a party.

### Issue 2: Low population awareness

Low population awareness was addressed through an increase in advertising and visibility of same through the institute, with multiple posters placed with greater frequency in high

footfall areas, as well as in additional locations such as bathrooms, on-campus non-academic facilities like the pool hall and medical centres. This did not see an increase in participation, though multiple calls and queries were received from ineligible students. From a perspective of visibility, there was certainly a confirmed increase. As a result, two inferences can be taken from this:

1. Students with SLDs saw these adverts and declined to show interest, or

2. Poster (text)-based advertising is not suitable for this group overall.

**Issue 3: Technological limitations**

The previous semester issue did not repeat itself and participants did not record or indicate any issue in regards to use or utilisation of any aspect of the project per se. In contrast to the prior situation, Oscar and Juliet both indicated a high level of proficiency in regards to matters technical. Without significant evidence to indicate otherwise – and as having the most up to date software possible is not strictly speaking a necessary requirement – this concern can be viewed as something to consider but not otherwise critical.

**Issue 4: Low cohort motivation vs. Passivity**

Following the trends indicated by the main phase surveys, a lack of time was the greatest limitation in using the service, while Oscar's position on placement further impacted on both his need and ability to utilise the service (since he did not have assignments to pursue in and of themselves, while his access to the internet was also limited). Given the survey

responses all respondents are certainly aware of the need to focus on and take charge of their education: from a self-response perspective, this could potentially be discarded. However, the lack of surveys or responses from India (who suggested she would and then did not), Victor, and Charlie may indicate a low motivation threshold, at least in regards to the work vs. reward of the survey itself.

**Issue 5: Activation vs. Negative affectivity.**

India's initial concerns and objections in the pilot phase survey were the major indicators of negative affectivity. There were no further indicators of an outright negative viewpoint or discussion in any subsequent contact, correspondence, or responses. India did in fact soften on the concept, per the aforementioned Facebook post, and any responses from respondents tended towards constructive criticism rather than an outright dismissal of the service or concept. One aspect which should be noted is Juliet's responses in reaction to factors external to the project: while overall satisfied with both Student Jam and the efforts of the disability service in Waterford Institute of Technology, her reactions to lectures and coursework was uniformly conflicted, stating

> '*Sometimes lectures would give un clear instructions. Or would not turn up to class. Also I received the wrong mark in one of my final modules, which I think is just not good enough at fourth year level.*'

She also suggested that she did not receive adequate support from her lecturers, school and Student Union, rating the institute's meeting of her needs as poor and comparing badly with other institutes that she had attended.

**Issue 6: Learned helplessness**

There was little that would legitimately confirm the presence of learned helplessness at this stage – while an argument could be made for the lack of posting, this would more likely be an inference of passivity than learned helplessness (and absence of evidence is not itself an indicator of it).

### 5.4.6          Reexamining the patterns

While on-site participation decreased in the main phase, the beginnings of more targeted questioning did at least begin.  Looking more closely at what was communicated within and across the message boards, both in tone and style, the nature of the language and discourse began to adapt. Initially, an interaction posted might appear like this verbatim example:

> **Juliet:** Any general guidelines on how to start a results section for a thesis?

> **Brian:** There's no exact way set in stone for presenting results at undergraduate level, but the type of data you are presenting can help shape it. Would you like to tell me more about it? Send me a private message if you would prefer to not say here (if you click on my user name, it will bring you to a page where you can do that.)

> **Juliet:** Thank you
>
> the tiltle is an exploartaion into the supports available for dyslexic students throught the irish educational system
>
> am doing 6 interview for it
>
> reserch questions are:
>
> what citeria must a student meet to gain access to supports?
>
> what are the supports availble in primary secondary and third level?

what are the differences in support throughout the educational systme?

What was stated by the participants at each stage was not a long and lengthy expression,

but rather began to resemble the mimicry of dialogue. Sentences were short yet responsive,

as the following later exchange indicates:

**Juliet (Feb 21st, 4.59pm):** Hi

just wondering ( i know this site isint really for this) would anyone have a contact of a primary resource tacher that would be intrested in taking part in an twenty minute interview.

**Brian (Feb 21st, 7.56pm):** I know of someone, but the only problem is that she is currently in Uganda. I can ask if you'd like to do an interview by email if that's of any help?

One option might be to contact Nuala at the Access office in Student Life and Learning. She liaises with a lot of the local schools and might be able to put you in touch with someone.

If anyone else occurs to me, I'll let you know.

**Juliet (Feb 21st, 8.18pm):** never thought of asking her thanks appreciate that , two droped out at the last minute typical , i will keep the person in Uganda in mind if cant find anyone i will ask you to ask her.

Thank you

**Brian (Feb 22nd, 11.58am):** It's not a bother - I have had interviewees drop out at the worst of times in the past, so I am happy to help.

**Juliet (Feb 26th, 5.16pm):** got some one

**Brian (Feb 26th, 6.53pm):** Excellent! Well done.

Juliet's original post and indeed her responses have a number of things in common with the

other posts placed on Student Jam. Sentences tend to be brief and to the point, but also

structured conversationally, in keeping with online discourse on sites like Facebook and

Twitter – Juliet's first two posts are in fact only 50 and 60 characters over the Twitter character limit of 140, respectively. What's also interesting is that, unlike in previous threads where the question trailed off to no further response from the participant even while a topic was ongoing, Juliet came back to confirm that she had an interviewee sorted. By contrast, the prompting posts posted by the primary researcher had no impact, with no responses being added to them, a factor actually predicted by Juliet in her pilot phase feedback: *'I don't think the social section will be used people have facebook for that'*. The only sections on the site used were in fact the Coursework and How Do I? Areas: no posts were made in the Social, Technical Support, News, and What Would You Like? sections aside from the prompting and area-explanatory posts by the primary researcher.

Frequency of posting had an initial burst: there was an effective and immediate reaction in relation to the announcement of the incentives scheme at the end of the pilot phase and beginning of the main phase, in which a flurry of logins occurred within a six hour period, as well as an increase in posting at the same time. This however eased out over the first two weeks of the main phase and had returned to prior levels by the end of the first month in same. In all other instances, trend interactions are spread out over several days with little consistency as regards to timestamp of access.

**5.4.7          Additional findings and potential affectors**

While other institutes were contacted to take part in the project, few were able to join in any significant fashion. The critical aspect in this regard came down to two issues:

- The institutes had their own ethical requirements which required addressing

- Their own annual schedule

In the case of the former, there would not have been enough time to apply for ethical approval within another institution and then engage with the sample meaningfully over the course of the main phase, or to build a relationship and habit continuance with the group. In the case of the latter, an institutional lack of time was present – while interest was shown by a number of offices, they would not be able to facilitate participation and fully support their own populations. It can be taken from this that any further study should seek to engage additional institutes form the beginning of the process, rather than during it, in order to allow as much room as possible to engage with all parties to a mutually satisfactory result.

The poster-led advertising campaign ran into an administration issue as institute offices offered contradictory information as to what could and could not be done with posters on-campus. In order to get around this, and in an attempt to reduce the destruction of resources, school offices were contacted directly to acquire permission to display posters and information. The erratic advertising presence, particularly in the pilot phase (with Student Jam posters frequently being torn down) may have contributed, at least in some small part to the low initial participation levels.

While permission was given by both the disability officer and the ethics committee to place advertising for the project in the Academic Skills Center, a location in the Luke Wadding library specifically designed for students with SLDs to study together in privacy and seek traditional tutoring, this permission was vetoed by the then-overall head of the Student Life and Learning service. While this dictum was adhered to, the lack of advertising and awareness development in the central contextualized area for congregation of the intended population participants is likely to have impacted on the overall awareness, if not the uptake, of the project at the least.

Following the initial rollout of Student Jam, a factor for potential confusion also arose in a local nightclub using a very similar advertising campaign. These posters were placed in the same locations as Student jam posters over the main phase, and in some cases were placed over the Student Jam adverts as well.



**Figure 5.3          Potentially confusing advert from another source**

While by no means a definite issue, there may have been some unseen impacts from this, though it is likely such a specific repetition would be likely to occur in a future study.

## 5.5          Addressing the hypotheses

The following section will address and discuss each of the six established hypotheses and in turn accept or reject them based on the findings established over the course of the research.

### 5.5.1          Hypothesis 1

*H1: An online learning environment can be used as an active means of democratically supporting SLD academic needs.*

In order to accept or reject this hypothesis, it is necessary to define the conditions which would reasonably allow an answer in either direction. It would not be enough to suggest that usage alone would be a suitable criterion – this would only suggest that that particular party (or archetype of the condition) would be able to use the online learning environment. Multiple individual participants would in fact need to do the following:

1. Use the service (active posting as opposed to logging in only).

2. Report a successful reaction to same, preferably in relation to academic material or matters.

Due to the varying nature of SLDs as defined in chapter 2, sheer chance alone may mean that the system would suit a singular user but not a second or third party. As a means of democratic support then we would need to have the following conditions observed:

1. More than one participant using the service.

2. More than one SLD-type present (at the least, two differing conditions among two individuals at a minimum.)

While the low participation numbers would lighten the weight of validity from findings, we can certainly use the sample as a case study for the proof of concept. In regards to the first set of criteria and following section 5.2, 60% of the participants posted on the forums in some capacity, with 40% of same enquiring as to academic needs and requirements. This is furthermore reiterated in section 5.4.1, which notably saw a spike in use of the main forum in late January to early February, and tangential use of the Facebook page in March and April.

In regards to the second set of criteria, there was also more than one type of SLD present, due to the posters in question being Juliet (dyslexia), Victor (dyslexia), and India (whose condition is withheld for data protection purposes), as confirmed in the participant profiles in section 5.2. Oscar's anecdotal intention mentioned in sections 5.2.1 and 5.4.2.5 to use the site while on placement (and access to the site while away from the campus) is in and of

itself a democratic use, since he was not restricted from supports by dint of not being on-campus.

On balance, hypothesis 1 can be accepted.

### 5.5.2        Hypothesis 2

*H2: The development of online learning environments will enable a practical support for engaged students in third level education which can enhance overall performance.*

As outlined in section 3.2.1, the key aspect of H2 is the development fundamental useful support that an online service would actually provide. To that end, the actual usage and regard for usage is critical, shifting the weight of discussion onto postings made and to the direct feedback provided by the participants.

While usage never hit a high quantity or consistent level of posting each month, there was at least some level of engagement. Juliet in particular used the network for three separate issues over a number of instances.

In order to gauge the overall regard for the support, it is necessary to look at the reported feedback of participants through the questionnaire. Of the respondents in the pilot phase, 66% were satisfied with the support and support options provided, as detailed in section 5.3

and table 5.2 in particular. Initially, teething issues were reported in getting used to using the site:

> *"It took a while to get used to the layout as I got a bit confused between the headings for example coursework and academic skills but understood them after a while.  Other than that everything is fine"* – Oscar

> *"It can be hard sometimes to chosse where to write your comment so maybe have less options, for example course work etc"* – Juliet

The overall response following this user-learning phase was positive – in the case of the above-quoted parties, their other feedback responses were generally superficial rather than inherently structural. Both parties also suggested positive, practical aspects of it:

> *"It is easy to use and will hopefully help me with my coursework during this semester."* - Oscar

> *"It is a friendly place to ask for some advice when stuck on college work which helps a lot"* - Juliet

India meanwhile felt it was not as practical a support. While her regard was evident, it wasn't entirely clear as to what way it let her down as her comments went against what she already knew and had been told (in some cases referring back to our initial meeting, where the nature of a musical jam had been cited as part of the reason for the name):

> *"It's confusing, I am not sure of its function.  The name is a bit confusing, I first thought it was some kind of home-business by students making jam, then thought it might be a music jamming  group.  As a name for a website for students with learning difficulties, I am a bit insulted by it."*

While India did not respond to the main phase questionnaire, both Juliet and Oscar did, with the following quotes taken from table 5.6:

*"Provided quick easy to understand answers to the questions asked"* -
Juliet

*"They help with any issues a student may have with college work as the
student can post their problem to the tutor or other students. Student Jam
gets the information to them directly and focuses on the students specific
problem"* – Oscar

*"I am very happy with student jam. If the new website had the with the
same type of layout as the existing student jam it would be a help as it is
easy to follow"* – Oscar

Student Jam also scored highly in both cases in regards to matters of design, access, and

overall support, as shown in figures 5.12 and 5.13. Critically, that Oscar was able to access

the site while on placement and definitively away from traditional campus supports was of

benefit, even if he did not see a need to post as such. The presence of the support was of

use, as indicated in table 5.2.

On balance, hypothesis 2 can be accepted.

### 5.5.3        Hypothesis 3

*H3: Goal-oriented communication through social networks develops the capacity for self-
advocacy.*

By establishing Student Jam as an area in which participants can look for and receive

support on what they need in order to further their academic goals as well as social (based

on Snowden's goal-oriented theory as cited in sections 2.3.4 and 3.2.2). Leaving room for

the participants to request what they want was necessary from the very outset in order to acknowledge emancipatory and ethical considerations (as outlined in section 2.3.2).

The pilot phase raised concerns in this regard – while at the outset it was stated that all requests for support would be met, participants took some measure of concern with the visbility that this might entail and suggested a preference for prepreared material. Table 5.3 indicated a 66% response rate for the themes of passivity (of action) and isolation (a preference to be unseen). As a result of this, and due to the low level of uptake in the pilot phase, these themes were atively observed in the main phase with a concern for a spectrum of issues (as seen in section 5.3.3) ranging from passivity and low motivation to negative affectivity and learned helplessness. Incentivisation was also rolled out for this phase, though it could act as a confounding variable – are participants acting in their own interests of advocacy, or are they posting simply for the incentive?

The surge of posting in late January and early February as seen in figure 5.8 gives some credence to the incentivisation as a skewing variable. However, the drop off in posting following the surge (with posting levels moving in a downward direction thereafter) would actually go some way to indicating that the incentivisation was not in and of itself a purpose to post, either due to internal considerations, intrinsic motivations, or a lack of adequate value (as detailed in section 5.4.3).

Wile the use and uptake of the network reduced over time, this is not as grim a finding as it might seem superficially. Following from the positive feedback provided by both Juliet and Oscar in regards to the site (section 5.4.2.3), their stated time limitations (5.4.2.5), and their statements of the need for wonership of education, it can be inferred that they acted as self-advocates and prioritised what was necessary in the moment and based on their schedule. In mapping the key time frames, drops in activity align notably with exam periods and shifts away from assignment work which would typically require support.

Furthermore, there is an inherent effect towards self-advocacy – when the participants were unable to open their pilot phase surveys, as reported in section 5.3.1, Juliet took charge of the situation and reported the matter in order to resolve it and complete the task. Continuing this trend, it's also noteworthy that when there was a guaranteed incentive for completing the main phase questionnaire, she declined it, being happy simply to help, not only boding well for her engagement with the network and view of her education, but also in aspects of intrinsic motivation which will be addressed in section 5.5.6.

India summarised the conceit quite well, in that regard:

> *"sometimes for me it's just about having the information I need to be able to help myself."*

On balance, hypothesis 3 can be accepted.

**5.5.4          Hypothesis 4**

*H4: By providing a secure contextualised space for communication, peer-based support can emerge through engagement.*

In section 3.2.2, it was noted that at least aspects of emancipatory research needed to be addressed, per Walmsley (2001, 2004) and Oliver (1992, 2002): participants must be free to help themselves. Furthermore, there is a practical elegance is utilising the experiences and context of parties with SLDs to better support each other (as considered by Black and Roberts, 2009), rather than impinging a normative construct of what this might entail. Synthesising Barker's view (2009, 2012) as cited in section 2.3.5 that online environments are ideal venues to address issues of self-esteem, social-esteem, and –gratification Boud et al (ed. 2001) in section 2.3.2, who suggested the natural emergence of peer interaction. In order to accept or reject this hypothesis, there would need to be at the very least clear signs of participant interaction, preferably unmediated by the primary researcher. This interaction could be academic or social in nature to give an indication towards the formation of an in-group. Alternatively, a participant taking initiative and responding to a query by a peer on-site would also give credence to the hypothesis.

In this project, there was no direct interaction between participants whatsoever. While participants did engage with and use the site, they did not interact, by chance or by intention, with each other. While the nature of peer support was touched upon in feedback by Oscar (see section 5.4.2.3), this was not mentioned by any other participant. One aspect

which may be key to this is the timeline involved – in the instance of Charlie (section 5.2.5), it is clear that when a support relationship is present, as had been the case with her prior academic tutor, she was able to quickly and effectively engage with them. By contrast, it could be suggested that the lack of relationship – and the pressure of her final year of study – meant that building a new support relationship in such a space of time would be difficult and not of commensurate utility or benefit. The low level of participation also likely had an impact on this, since there were fewer parties present in the sample both to act as points for social gratification or amelioration, as suggested in section 2.3.5 in regards to online behaviour. Chang and Hsiao's view on heavy use of a system enabling disclosure (2013) would certainly align with this – even in the case of Juliet, the most frequent user of the site, usage could not be described as heavy.

On balance and for the purpose of this research, hypothesis 4 should be rejected.

### 5.5.5        Hypothesis 5

*H5: Contextualised online learning environments can be used to safely address the socio-emotional domains of students with SLDs.*

Continuing with Barker's (2009, 2012) considerations on online environments as an ideal set of venues to address issues of self-worth and support. The lowered state of visibility and heightened gatekeeping within the framework and methodology would also be of advantage in this regard, since there is presence to be detected until the participant wills it so (allowing them to 'lurk' and gain benefit quietly should they prefer at the outset).From a theoretical perspective, there is little reason to doubt the validity of the concept.

In gauging the effectiveness of this as a strategy, there are a number of views that can be addressed. At the outset, the nature of privacy and security is addressed at first meeting with the participant – this assurance is tacitly accepted by the participant when they sign the consent form (as they are agreeing both to abide by the nature of the project and to what protective measures are put in place for them). Their use of the site would go some way to confirming this tentative acceptance, at least in part. From a perspective of safety, this holds as an argument. The key then following this to move beyond the literal phrasing of the hypothesis ('can') towards the spirit of the meaning ('will').

In this regard, it is necessary to look at the means of disclosure used by participants. While academically-related posts were made, direct experiential statements beyond scope did not occur. India certainly came closest in this regard, seeking support in advance of a new module teaching Photoshop, during which she revealed her nervousness:

> *"I am worried about using photoshop, we will be using it for our marketing design module and it is not installed in too many classes*

> *because of the expense. Software packages are a problem for me and because of my short term memory problems it takes me quite a while to get used to the tools available. I am worried that scheduled class time wont be enough for me to get a good level of competency. I have considered sitting in as an extra in a class, but dont want to put any lecturer on the spot. Another student that would be willing to help would suit me perfect too. Any ideas that could help would be much appreciated."*

Following reassurance by the moderator, she responded:

> *"Thanks Brian, there is nothing yet that I can ask for help about, as it is all still very new. I could be worried about nothing, might just be a fear of the unknown. I'll know better after a couple of weeks. I just wanted to put myself at ease and know what options are out there before things do become a problem, sometimes for me it's just about having the information I need to be able to help myself."*

While Juliet posted more frequently than India, her posts tended towards a more goal-driven purpose – asides and references to her life and experience outside of this were limited to the topic at hand. A notable response in her pilot phase findings as seen in section 5.3.1 may also address an issue for this topic:

> *"I don't think the social section will be used people have facebook for that"*

This raises an interesting dilemma – if participants are on another network (and all participants barring Charlie were confirmed as Facebook users at some point) do they have a need for an area that addresses their social and socio-emotional concerns when, at least in theory, they already have both a site and an in-group that they have built already? There are key differences, of course – a site like Facebook is neither gated for privacy as such, nor is

it contextualised for support. Additionally, a friends list may vary in terms of who actually knows what information, making discussion of issues more complex in nature. Of course, the statement all the same goes some way to giving credence to the hypothesis, even if it is via a third party inference.

While she did not post in this fashion on the network, where Juliet's disclosure did occur is in the de facto private main phase questionnaire, as seen in section 5.4.2. While open in discussing her concerns and issues in that avenue, key sections in this case being 5.4.2.2 and 5.4.2.4, it would be closer to a one-to-one expression with a tutor and student, rather than with a trusted group of peers. While it could be seen as an opportunity to vent, it would however also speak positively of a building trust with aspects of the network. Were more time allowed for field study, the long-term implications could be interesting to observe.

There is also the philosophical issue to consider that in supporting the academic needs you are lightening the strain on participants. While this may not address some of the internalised concerns directly relating to their condition-based issues, the reduced workload and reassurance of an additional support – as suggested in sections 5.4.2.3 and 5.4.2.5 - would be present to ameliorate worries or concerns, though this would not necessarily affect the ongoing active issues.

On balance, hypothesis 5 can be tentatively accepted, with a view to deeper investigation to generate a more definitive respose.

### 5.5.6          Hypothesis 6

*H6: Online learning environments can be used to enhance the intrinsic motivation of students with SLDs.*

Key to the theory in section 3.2.3 is the function of intrinsic and extrinsic motivation. Increased levels of posting, particularly ones which might be considered off-topic (in this instance, anything not directly related to academic pursuits) would be a key indicator of intrinsic motivation, since the act itself would be seen as the purpose in and of itself. Strictly academic-based queries would be extrinsically motivated in that the purpose of posting is not internalised but for external validation or goals (such as an improved mark in an assignment).

Posting by Juliet, while semi-frequent, was closer to the transactional model as described by Snowden (2004). These posts were based on her academic requirements only, with little context outside of the assignments worked on at a given time being given. While effective as a support structure in that regard, the engagement with the network did not have a

chance to go deeper into her other needs, concerns, or drives. This would not be due to an issue with the network per se – when offered the incentive for returning the completed main phase questionnaire, Juliet actually declined it stating she was happy just to help. While intrinsic motivation  may not have been affected directly, this act would at least indicate a potential for affectation of same on some level due to the positive overall experience she reported in regards to Student Jam. Due to the lower level of posting by the other participants, there is next to no data to address in that regard.

On balance, and while there is cursory evidence available, hypothesis 6 should be rejected.

## 5.6        Conclusion

This chapter has addressed the overall findings of the research, breaking them down into case studies per participant, analyzing the results of both questionnaires, and addressing the themes, issues, concerns, and patterns that emerged. The main phase questionnaire also examined the experience of the participants overall, in regards to Student Jam itself, the academic experience outside of Student Jam, and other on-campus services used by the participants. Additional factors and variables were also considered, though as there is no definitive correlation between them and the findings they are not taken directly into account.

This chapter also addressed the hypotheses as established in chapter 3, accepting H1, H2, H3, H5, while H4 and H6 were rejected on grounds of insufficient evidence in this study.

The next chapter will now discuss the findings, addressing the research questions themselves, the limitations of the study and potential avenues for future research, before moving on to closing remarks.

## Chapter Six
# Discussion & Conclusion

### 6.1        Introduction

Having addressed the key findings of the research in the prior chapter, this chapter will now deliberate upon said findings, both as a general discussion, an address of the research questions as established in chapter 3. Additionally, a phenomenological perspective of the findings and a review of the established framework will be considered. Following this, the limitations of the research will be acknowledged, closing with some final remarks on the overall work.

### 6.2        Discussion of findings

While the findings, sample size, and overall engagement level may not have been so plentiful as would have been hoped or expected, they nonetheless did provide insight and data into the sample, the framework, and the concept itself as shown throughout chapter 5. The generally positive feedback, particularly as noted in section 5.4.2, did at least give some credence to the concept at the basic level of service provision. Functionally, an online service is something that could be of potential benefit practically and democratically. The biggest drawback in regards to the online behaviour is the lack of intra-participant interaction or communication. The majority of the questions were targeted and duly

answered by the primary researcher, but neither commentary nor alternative viewpoints were offered by other participants. This occurred even when non-academic posts were made by Victor and India. This could be due to the feeling that the question was answered (removing the need to engage), a concern for power distance (and resultantly not wishing to challenge or question a de facto authority), or simply not wishing to engage outside of their own work and needs and considered in section 2.3.4. Respondent feedback stated no issue as such in regards to posting or using the site, so all three may apply variably. Future work in this regard should try to mediate these aspects in particular if peer engagement and support is to emerge naturally (or at all) by delving deeper into the concepts discussed in 2.3.5 and 2.3.7

There are of course aspects of the site and service which would, in hindsight, be more effective by changing in the future. First and foremost, a longer timeline for the project would be essential, both for data gathering and for participant use itself. While precluded by the established length of the research programme at this level, a more longitudinal approach would allow for a greater overview of the sample and their behaviours. It would also enable a capacity for peer-sharing of the concept and word-of-mouth distribution. A longer timeline would also allow for the potential to engage participants at the start of their academic career (when habits are not yet formed or defined) and track their progress over the length of their time in third level. In addition to providing a greater range of information, it would also enable the option of staged progress for all participants, with the promoted option of increasing online responsibility within the service.

The creation of a dedicated website was of more overall benefit than it was a problem. While participants noted a learning curve in the pilot phase feedback, this did not in and of itself prevent them from adapting to and using the site. Given the low uptake on the Facebook page and absolute lack of use of the Twitter option, the dedicated site kept a distinction between (academic) work and social/private lives, per Ramsay (2012). That is not to say that the website would not benefit from modifications itself: the main phase redesign, in being a light modification and tweaking rather than an outright overhaul was overly conservative for the purpose of the research design. Given both the area usage over the course of the study and the general feedback provided, a severe streamlining of the site would be the better option in the future. Following directly from the posting trends, a two-section message board would be a more viable option, split distinctly into Academic/Work and Social/Chat/Personal fields. Were it to be of vital importance, a third section would be a possibility but no more (and the use of such a section should be monitored heavily to see if it should be retained permanently).

Furthermore, the nature of the site itself should be reconsidered. The thinking behind the threaded boards was to allow participants to see methods of thinking and also that of content management, as discussed in section 4.3. This however may have also acted as a visual disincentive and information overload. Following on from the feedback from Juliet in particular from sections 5.3.1 and 5.4.2, a better compromise would tie into a proposed concept for future studies which would better utilize the dialogic approach that the participants of this iteration employed: a model which utilises the structure of Instant Messaging or Facebook, retaining the constant posting that both Student Jam and Facebook

offer, but treated as closer to an active and constant real time support option. Content Management would be moved entirely to the main site rather than placing it there in addition for back-up and access of learning resources. Search functions could certainly be retained, but the emphasis would be placed on the immediacy of posting and response.

The need for administrative support may prove vital for similar projects in the future. The conflicting information provided in regards to on-campus advertising led to a significant waste of time and resources with the constant posting and removal of advertising materials as mentioned in section 5.4.7. The vetoing of the advertisements being placed in the Academic Skills Centre – the aforementioned hub for the on-campus SLD population to gather – would have at least affected the uptake of the project (or at least enquiries into it) on some level. With this support acting to remove a potential barrier it would at least remove the issue as a confounding variable and allow for a more definite confirmation of the usefulness (or lack thereof of the advertising and awareness efforts). Critically, this support should not itself be seen as an endorsement, as that would have a counter-productive effect in the opposite direction: participants under these circumstances may feel obliged to use the service rather than wanting to, confounding the data even more profoundly.

The form of advertising used should also be revised significantly. While posters are a common option and can be effective, as noted in section 5.4.5 there are issues with the approach from the perspective of SLDs. With the recurring issue of visibility and the

awareness of difference (if not an outright feeling of stigma), potential participants may very well wanted to have read and taken information from the advertising but did not want to be seen doing so. More critically the use of text, however mitigated by imagery, is itself part of the issue since it's the perceptual intake of written information that can be problematic for so many of the population. There is also in many respects the possibility that the language used may itself have disincentivised or pushed participants away. In the first iteration, *'An MSc research project designed to help students with learning difficulties…'* the nature of the project as stated may have dissuaded use (since it was a Masters research project rather than an official support) while the emphasis on learning difficulties – a concession towards more empowering language over the more commonplace use of the term 'disabilities' – may actually have indicated that the project was not designed with the population in question in mind. While the second iteration of the power as *'an online student support research project designed to help students with learning difficulties'* may have ameliorated the initial issue, the repeated use of learning difficulties as a term may have had the adverse inverse effect of what was intended.

The language of the field should also be considered, examined, and redefined. As both the source of the extant conditions and as a tool which itself defines and potentially oppresses them, the use and form of language becoming more equanimous would be a significant step, as discussed in section 1.1 and continued in 4.4. The word disability, and indeed any expression of the SLD acronym as previously established, is a constant referral to a particular state which is typically stigmatised, and has been a consistent concern throughout the project. It in turn shapes the internal awareness of difference that invisible SLDs

perpetuate and the subsequent fear of labelling. By that same token, this research's own referral to non-SLD populations as normative is a matter of at least conscious concern, though at present a more suitable and equality-based labelling in either regard is immediately apparent. While there was a brief flirtation with the term 'normotypical' in reference to the 'neurotypical' label used by the autism community for non-autistic spectrum populations, it both necessitated too much explanation (missing the point from a practical level) and also did not affect the semantic issue inherent to the issue of norm(atives) vs. different.

One methodological solution proposed when the initial findings of this research was presented at the SWIIS 2012 conference in Waterford, Ireland, was the creation of a destination location for such a site and service. Where the challenge in this lay, aside from the nature of creating something that people would flock towards, was in the potential approach that could be used to address issues of stigma and visibility: the site would be promoted towards the entire academic population, not just the students with SLDs. While at the outset this would seem to create an overt issue – students with SLDs will, as with most young people given a preference to remain a part of or join an in-group, not disclose differences – there may in fact be a significant merit to this. By creating something that everyone wants to be a part of, you remove any sense of caution or trepidation as regards to use (while also lowering concern for visibility – in fact visibility would become something actively sought).

The key in this approach would be addressing the ethical and methodological issues that would arise from this. Were normative students to use the service, then a secret, monitored area might be necessary for contextualized use by the SLD population. This would however require specific safeguards in regards to data and privacy protection, as well as addressing participant concern. Issues in relation to freedom of information and the ethical issues of creating a specific area for a select group (to say nothing of enquiry into and disclosure of SLDs as well as the significant increase in resource use and workload) would prove a challenge. Another iteration would be to advertise on a wide scale at all students but only allow students with an SLD to participate. This itself creates issues in regards to fairness of use and equity. In either case, more robust boundary development and resources would also be necessary. There is certainly however the DNA of an interesting paradigm and framework within this idea.

## 6.3          Addressing the Research Questions

In addressing the research questions, it would help for context to reiterate the acceptance and rejection of the hypotheses:

| Research Question | Hypothesis | Accepted or rejected? |
|---|---|---|
| **1: Engagement** | *H1: An online learning environment can be used as an active means of democratically supporting SLD academic needs.* | Accepted |

| | | |
|---|---|---|
| | *H2: The development of online learning environments will enable a practical support for engaged students in third level education which can enhance overall performance.* | Accepted |
| **2: Interaction** | *H3: Goal-oriented communication through social networks develops the capacity for self-advocacy.* | Accepted |
| | *H4: By providing a secure contextualised space for communication, peer-based support can emerge through engagement.* | Rejected |
| **3: Motivation** | *H5: Contextualised online learning environments can be used to safely address the socio-emotional domains of students with SLDs.* | Accepted |
| | *H6: Online learning environments can be used to enhance the intrinsic motivation of students with SLDs* | Rejected |

**Table 6.1          Summary of hypotheses acceptance/rejection**

Moving on from this, each section will address the research questions with regard to the findings, the hypotheses, and the implications of their acceptance or rejections as appropriate.

### 6.3.1          Research Question 1: Engagement

***RQ1.*** *Can online learning networks enable the engagement of the SLD student population?*

At the very outset, the SLD student population can be invited into and remain within the online network on a practical basis as regards their studies at the least. As indicated by 5.3.1 and 5.4.2, participants were both comfortable and happy to use the system as they

needed or wanted. Section 5.4.2.3 in particular indicated that the experience of the participants on-site was positive and useful. At an academic and a support level, the online learning environment can be considered a success.

As seen in section 5.5.1, the data findings supported the notion of using online support systems as an active and democratic way of supporting SLD students in their educational endeavours (H1 accepted). It can also be accepted that the function and nature of an online support is practical and flexible in its use and form for the intended population as noted in 5.5.2 , providing the potential to enhance their performance therein (H2 accepted). Given the overall responses and feedback to the project, as well as the baseline of use, ICT and social networks can certainly be used as a means to engage with and support students with SLDs. The extent to which it can be applied will be based in part at least upon the needs, wants, and motivations of participants. Juliet suggested for example in section 5.3.1 that the social aspects of the online environment would not be used due to the students already having options such as Facebook available to them for social discourse and interaction outside of the network. Oscar hinted at how this social element could be used in his feedback as noted in 5.4.2. Ultimately, the sample will vary at least in part due to the extrinsic social value applied by peers, as noted in 2.3.5, as well as their own intrinsic values noted in 2.3.4.

Moving forward then, it is necessary to look at how to refine, improve, and enhance the service so as to enable a greater uptake and level of support.

**6.3.2          Research Question 2: Interaction**

*RQ2.  In what way(s) can communication through online learning networks increase peer-based interaction within the SLD student population?*

As indicated in part by section 2.2 and more fully in sections 2.3.3 and 2.3.4, the perceived mental difference of SLDs, the hidden geographies, and the state of isolation engendered by these factors means that people with SLDs are less likely to talk about and more likely to hide the nature of their conditions. This presents an issue in that it reduces the capacity for them to support each other (since as noted in 2.3.2 they would be the most contextually informed and suitable experts on said conditions). The process then of creating a space where a basis for such interaction would be mediated was the implicit goal of the second research question.

As stated in section 5.5.3, goal-oriented communication through social networks develops the capacity for self-advocacy (H3 accepted), with participants becoming more willing to act in their own best interests in spite of their perceived sense of mental difference. However, while section 5.5.4 notes that the online learning environment can be a secure contextualised space for communication; peer-based support does not necessarily emerge through engagement (H4 Rejected). This creates a dichotomy of and within the stated purpose: participants are more willing to take charge and ownership of their issues, but only on an individual basis at present. Due to the small sample size this could be taken as not having enough participants on hand to take the difficult first steps of disclosure to

everyone, which would require the building of trust both with each other and the moderator. The reactivity effect, as noted in 5.3.3 and 5.4.5, may have some measure of impact on this, as might the factor of passivity. While both were reasonably discounted as affecters within the study generally and in regards to uptake, that is not to say that they did not hold some sway.

While ICT and online learning environments can be used to engage with students with SLDs, and certainly there is the potential for the framework to act as a medium for peer-based learning and communication, the evidence of this study is on a case-by-case basis rather than being itself definitive or rigourous. A longer timeline of study and wider population would be essential to testing if an emergent peer-support group would occur or would require prompting into formation.

### 6.3.3        Research Question 3: Motivation

*RQ3. Can online learning networks be utilised to support the socio-emotional domain needs of the SLD student population??*

Continuing the points raised in regards to the need to address the socio-emotional factors of the SLD conditions as well as the practical, academic, and biological elements as discussed

in sections 2.3.3 to 2.3.5, this research question addressed the most heavily internalised factors of the participants needs.

Section 5.5.5 continued the perspective of participant interaction, suggesting that contextualised online learning environments can indeed be used to safely address the socio-emotional domains of students with SLDs (H5 accepted) as theorised. So long as participants can be assured of privacy and security, in addition to the anonymisation for any external discussion (as mentioned in 5.4.2.3 and 5.4.2.5) they will indeed be happy to engage on-site. This in turn can lead to a safe and secure disclosure from their perspective.

Section 5.5.6 discussed the lack of evidence within this study to confirm that online learning environments can be used to enhance the intrinsic motivation of students with SLDs (H6 rejected). While there is no evidence actively against this, and as section 5.5.6 indicates there are some circumstantial hints external to the study that may warrant investigating, there is also no active confirmation for it either. The rejection of H6 is at least by no means a flat rejection of the concept, but it does require further study to establish a more concrete response and interpretation.

As a result of the above, ICT can be considered as usable at least to a limited extent in this fashion, though how these supports are mediated will be the crux for future investigation. The online nature certainly removes any overt barriers and visible concerns once the

safeguards and gate-keeping has been established appropriately for the participants, though

disclosure may itself take time and the development of explicit trust and acceptance of all

parties within the system. With the lack of an emergent peer-support or peer-support group,

H6 cannot be properly addressed, though the overall discourse at least suggests that ICT

can be used in such a manner.

**6.4                          Phenomenological Perspective**

Due to the relatively small sample size, a phenomenological perspective should also be

taken in summary and in light of the findings, as suggested in section 4.2. As suggested in

that same section, the phenomenological view operates by bracketing assumptions and

biases in order to view the essence of the object of study (Boland, 1985; Boland and Day,

1989). When bias and motivational factors are not taken into account for behaviours, what

is observable?

At the outset, the concept of the research was based in the legal, moral, and ethical

requirement to develop a support system for the SLD student population to utilise, enabling

them to achieve a normalised level of performance. However well meant such

considerations are they do not necessarily answer the question of whether the same

population actually requires this support, irrespective of any authoritative statement of

entitlement. By preparing a support structure without an express commission by the

population or in-group, there is an inherent presumptuousness, if not arrogance (Kincheloe and McLaren, 2000) to the development. There is also at the outset the presumption that the participants would want to engage with each other on a support level, which itself aligns with Juliet's comments in section 5.3 where she acknowledged that the social aspects of the site wouldn't be used as participants already have this need met though prior means.

As suggested by Oliver (1992, 2002), the role of the participant within the process is essential. Yet the role of the participant at the outset of this research is one of support-seeking as opposed to stakeholding or equal participation. Even though it was an outlined potential outcome, there was an inherent inequality at the outset maintained by a normative moderator. While a transfer methodology was set in place, this was also both created and outlined by a normative researcher. Atkinson and Walmsley (1999) and Black and Roberts (2009) each suggested that the SLD population are 'experts within their own support needs' yet they were not centralised within the methodological development process, only the methodology. Did the research fail to capture the essence of the SLD student population, be it in need or in character, and instead apply personal expectations, biases, or assumptions to the operation? As a consequence of this, was the low uptake therefore due to an inability to deliver a support system for something external to the understanding of a normative researcher?  Oliver (1992), Maguire (1987), and Bourne (1981) each suggest the implicit need for shared direct experience which would give credence to this.

The absence of behaviour on-site also presents an interesting phenomenological issue in that it requires the absence of data as a perspective to be observed and interpreted. This does however lead into another consideration. Participants are required to post, yet can only interact with what they see on the site: if there is an absence of visible support (while methodologically the moderator was obliged to wait for them to post in order to support them) did this in turn create an issue for participants who wanted to post more actively? This continues into the stated objective of enabling peer support – if participants are not posting frequently enough, there is no phenomenological basis for the peer support to emerge, since there is not enough material posted to move beyond what the moderator was ethically allowed to cover and require the participants to (self-) advocate for and on. Perhaps a lower level of participants reduced active participation due to the smaller number of points of posting observed. Is the phenomenological issue the medium itself?

On a deeper level, there is also the concept of the digital entity – the subject, thing, or entity which contains information on the subject's relationships to other entities (Windley, 2005). This relates to the idea of virtuality discussed by Turkle (1996) as mentioned in section 4.1. The participants are, as a group, trying to exist within and contribute towards a virtualised and abstract concept. While participants stated that they rated themselves as sufficiently experienced with social networking and the internet in section 5.4.2.1, they also described themselves as being inexperienced with computers, highlighting a disconnect between their self-view and abilities. While there was a reported satisfaction with using the site, per section 5.4.2.3, this stands at odds with the low level of use as stated in 5.4.1 and their

individual profiles in section 5.2. The aforementioned disconnect may be attributable to this.

The function of satisfaction within this concept cannot be overlooked – as mentioned in section 2.3.5, a significant aspect of the appeal for an online environment is as stated by Barker (2009, 2012) a means of ameliorating issues of self-esteem, social compensation, and social gratification. The impact of the group and group identity as validator is an important aspect of this, so if the group in question is small or effectively non-existent (by way of being a collection of individuals as opposed to a community or a community of practice at least) then the value is diminished and participation is less likely to occur. It can be surmised that two thresholds must be crossed to enable this: the first, that the sample is large enough to create this in-group or community; the second is that the group will be large enough to allow an initial minority of posters to begin actively participating or being (encouraging others to do likewise).

## 6.5        Revisiting the investigative framework and guiding principles

Section 3.3 outlined the investigative theory and framework which was used over the course of the study. Having addressed the findings and phenomenological perspective, it would be worthwhile reviewing what aspects of the framework were successful and which should be reviewed or revised for future research. This section will first present the

visualised frameworks as shown in chapter 3, then following their review will colour code

them based on their level of success. The criteria for this are outlined in Table 6.2.

| Indicator | Example | Meaning |
|---|---|---|
| The colour green | | Confirmed or successful aspect |
| The colour yellow | | Potential or tentative success, subject to review |
| The colour red | | Requires review to apply in future studies |
| Solid line | | Confirmed or successful relationship |
| Dotted line | | Relationship or concept should be reviewed. |

**Table 6.1          Coding for visual frameworks level of success**
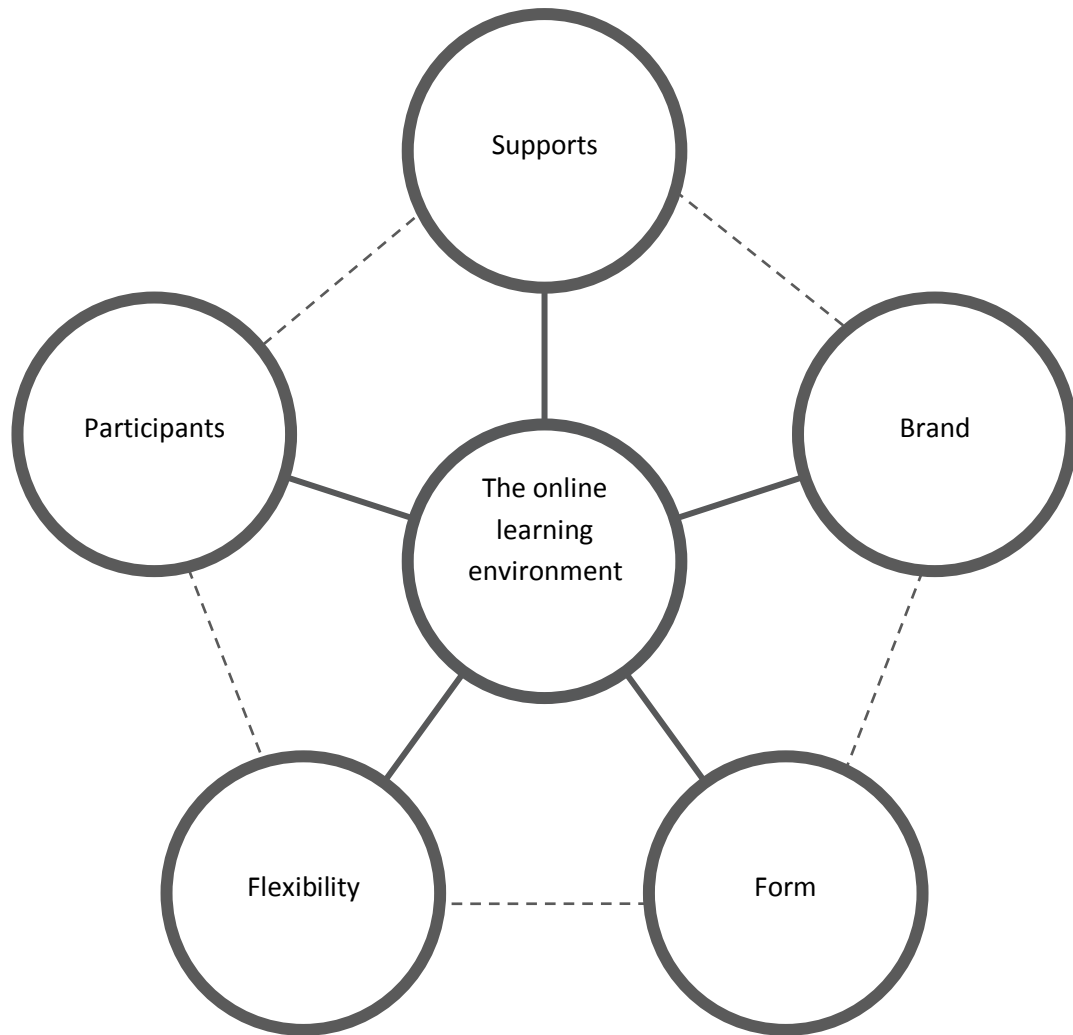
**Figure 6.1          Framework elements for the system revisited**

Figure 6.1, as originally outlined in section 3.3.2, unified the five thematic system elements
for an online learning support and environment. As the findings indicate, participants were
present, even if the sample size was relatively small. Their use of and engagement with the
network (as indicated by the findings in chapter 5) also indicated a confirmed relationship
between the two elements. Section 5.4.2.3 indicated varying degrees of satisfaction with the
overall structure – while opinions varied in regards to comments on the form, there was a

positive association between the brand concept and the supports offered, and the brand and

form. Taking into account the constructive criticism offered by Juliet in section 5.4.2.3 and

by Juliet and India in section 5.3.1, flexibility and responsiveness of design is essential,

though something which may not have been adequately addressed in their subjective

contexts. There is also the noted issue of India in regards to the brand name of Student Jam

and Juliet's view of the jam jar motif as being relatively pointless (again in section 5.3.1)

that would suggest that this aspects, while successful in establishing the distinct identity,

should come under review. To that end, figure 6.2 gives an indication of the current status

of this framework: relatively successful in concept and execution, though something which

would benefit from adjustment for future application.
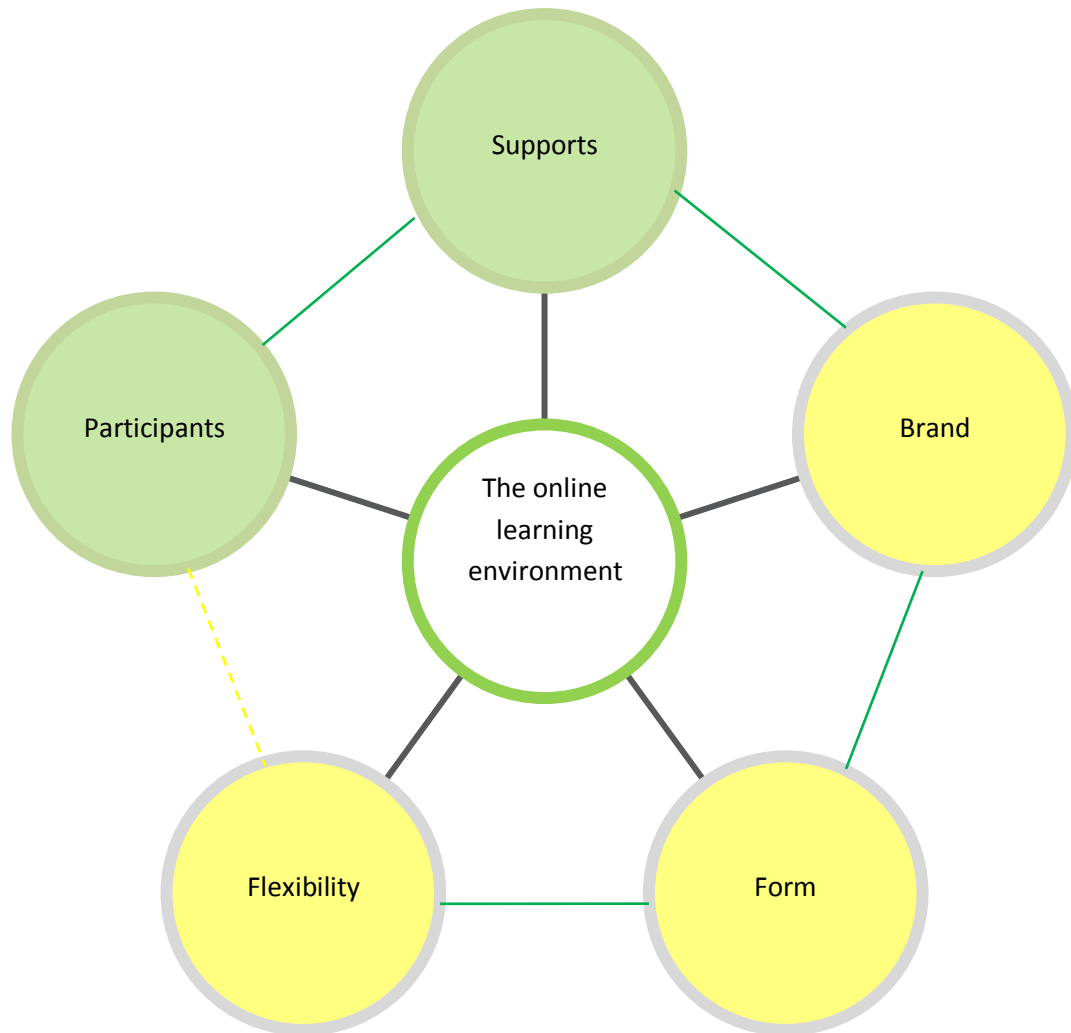
**Figure 6.2**        **Framework elements for the system addressed**

The next stage of the visualised framework was that of the human-centered engagement system. The central conceit of this, as established in section 3.2.2, was that following the engagement of the individual participant, who is positioned at the centre of the system, with the mediating system, their use would continue outwards through the mediator to engage with other participants (themselves the centre of their own usage), as shown in figure 6.3 below.
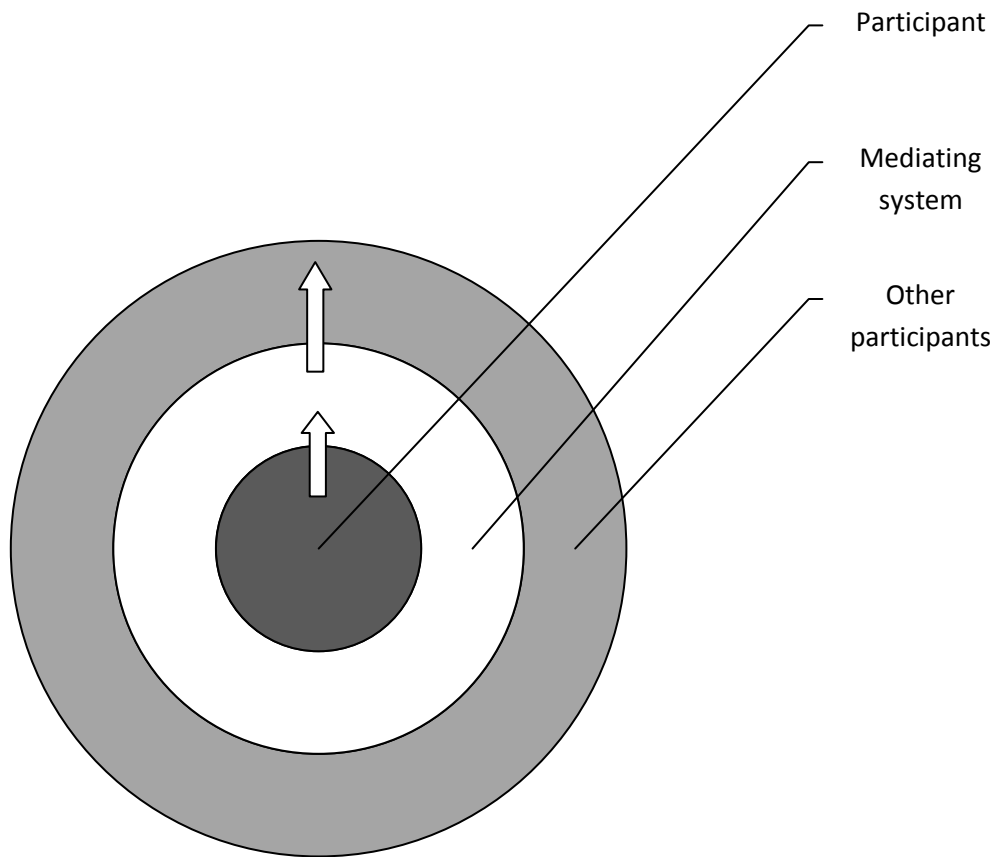
**Figure 6.3          Outward moving system engagement revisited**

While the participants did engage with the mediating system, moving from the centre outwards as indicated by the framework and section 5.4.1, they did not at any stage engage with each other on-site or within system. As a result of this, moving beyond the point of mediation to peer engagement cannot be confirmed as a viable aspect of this element of the

framework under this study, leading to the following adjustments with the framework as

shown in figure 6.4.
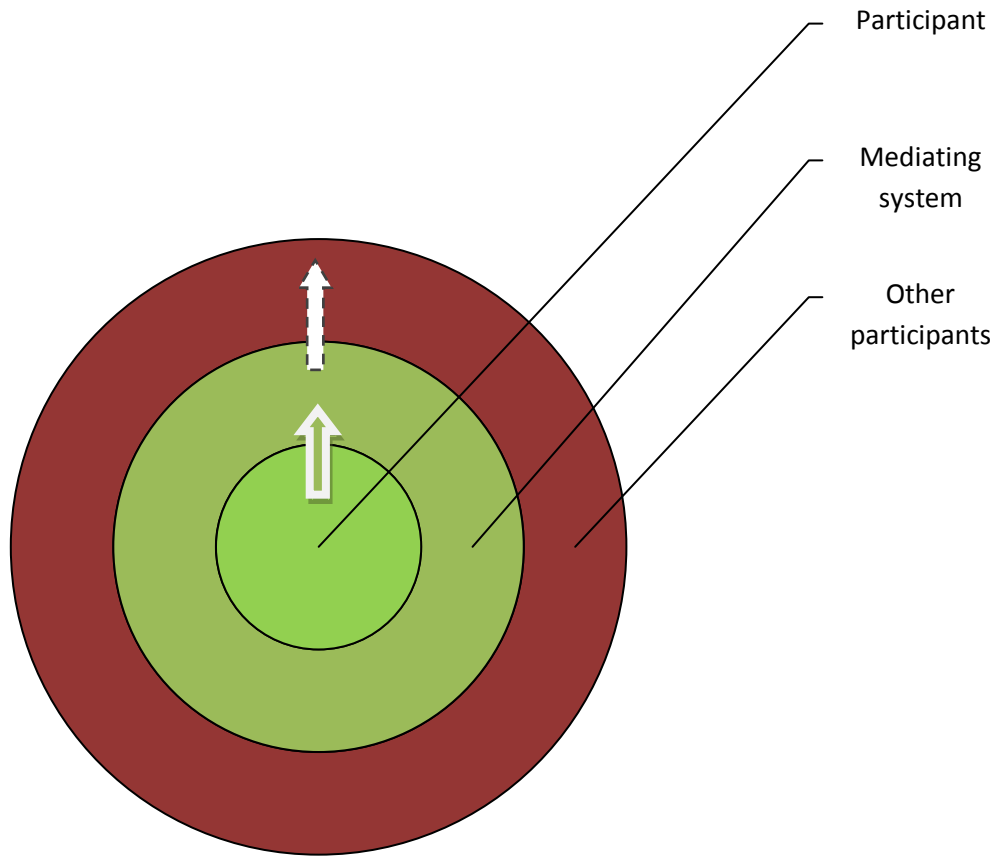


**Figure 6.4**          **Outward moving system engagement addressed**

Following this in chapter three was the cycle of participation, as shown in figure 6.5. In the anticipated mode, participants would begin using the system (i), receive benefit such as academic support from doing so (ii), becoming more engaged with the service and transitioning to a habitual user who becomes more open and active in their use (iii), leading to their becoming a part of the support for other and future participants.

i. New participant begins using the system

ii. Participant receives benefit or utility from using the system

iii. Participant engages habitually with the system, sharing their experience in the process
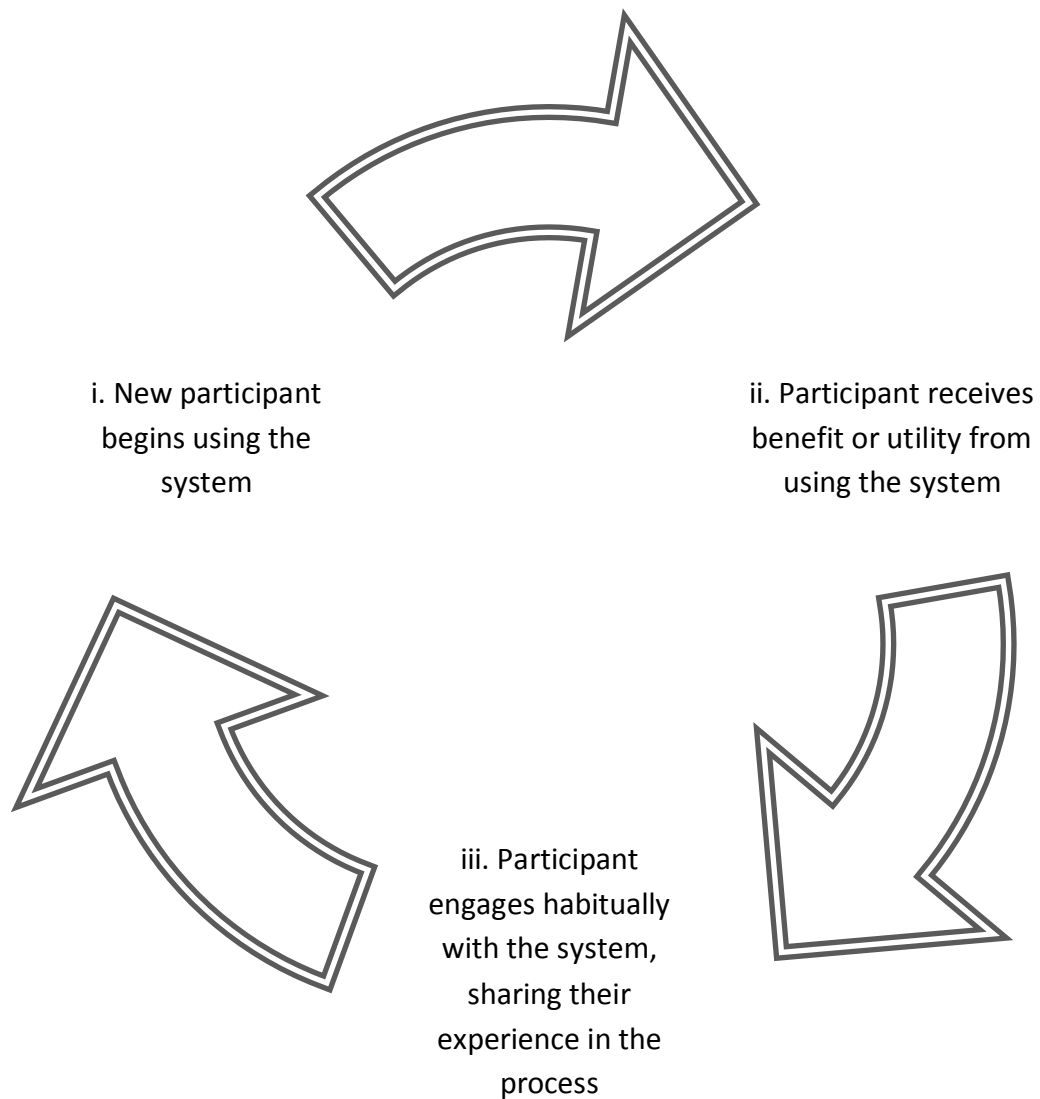
**Figure 6.5          Cycle of participant engagement revisited**

An extension of the pattern shown in figure 6.3, this model falls under a similar issue in regards to the lack of peer-to-peer interaction. While disclosure was achieved, as indicated in section 5.5, this was minimal and directionally would be more accurate being described as peer-to-moderator rather than peer-to-peer. As this interpretation could be disputed, transitioning to stage (iii) within the cycle should be addressed as provisional and subject to further study. The transition from and method enabling a return to stage (i) from stage (iii) certainly should be placed under review in later study. The first transition from stage (i) to stage (ii) can certainly be accepted as a successful element of the cycle. Figure 6.6 presents this reconsideration in full:

i. New participant
begins using the
system

ii. Participant receives
benefit or utility from
using the system

iii. Participant
engages habitually
with the system,
sharing their
experience in the
process
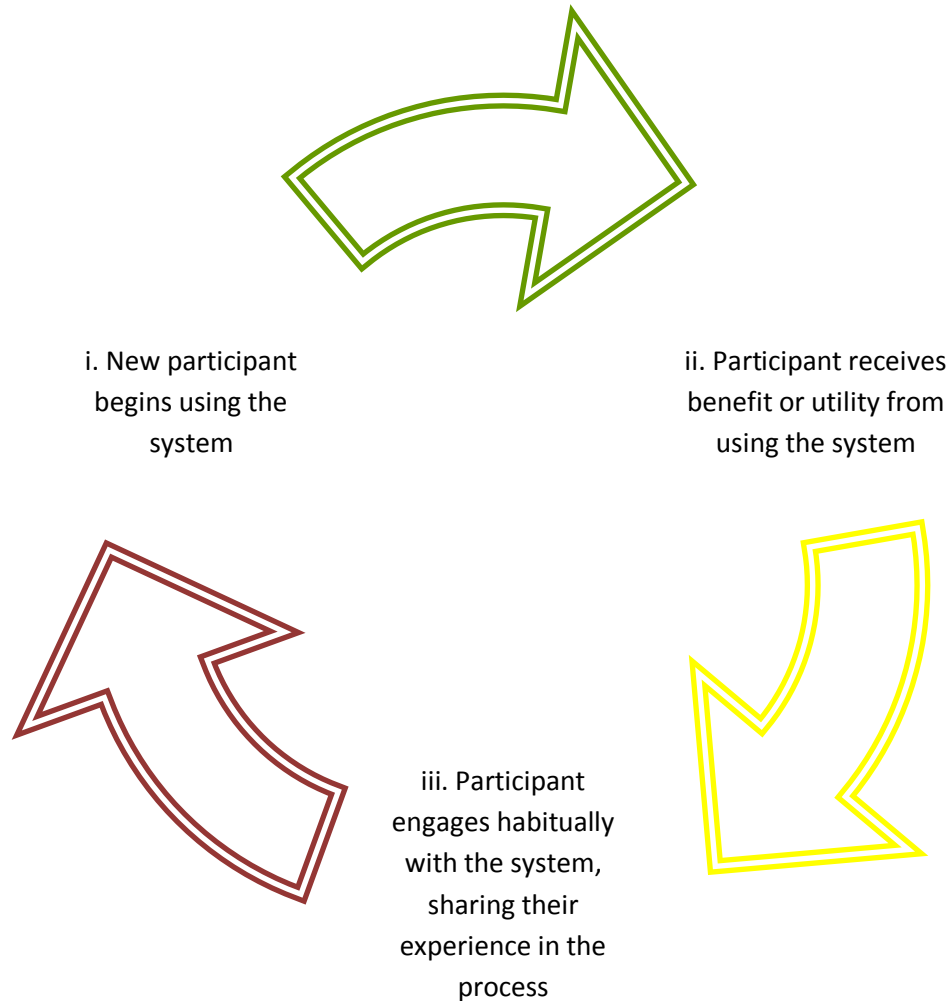
**Figure 6.6          Cycle of participant engagement addressed**

The final stage of the visual framework as outlined in chapter 3 was the modes of interaction. This was established as three potential tiers, as shown in figure 6.7:

- Participant interacts with moderator

- Participant interacts with moderator and other participants

- Participant interacts primarily with other participants and potentially not at all with the moderator.
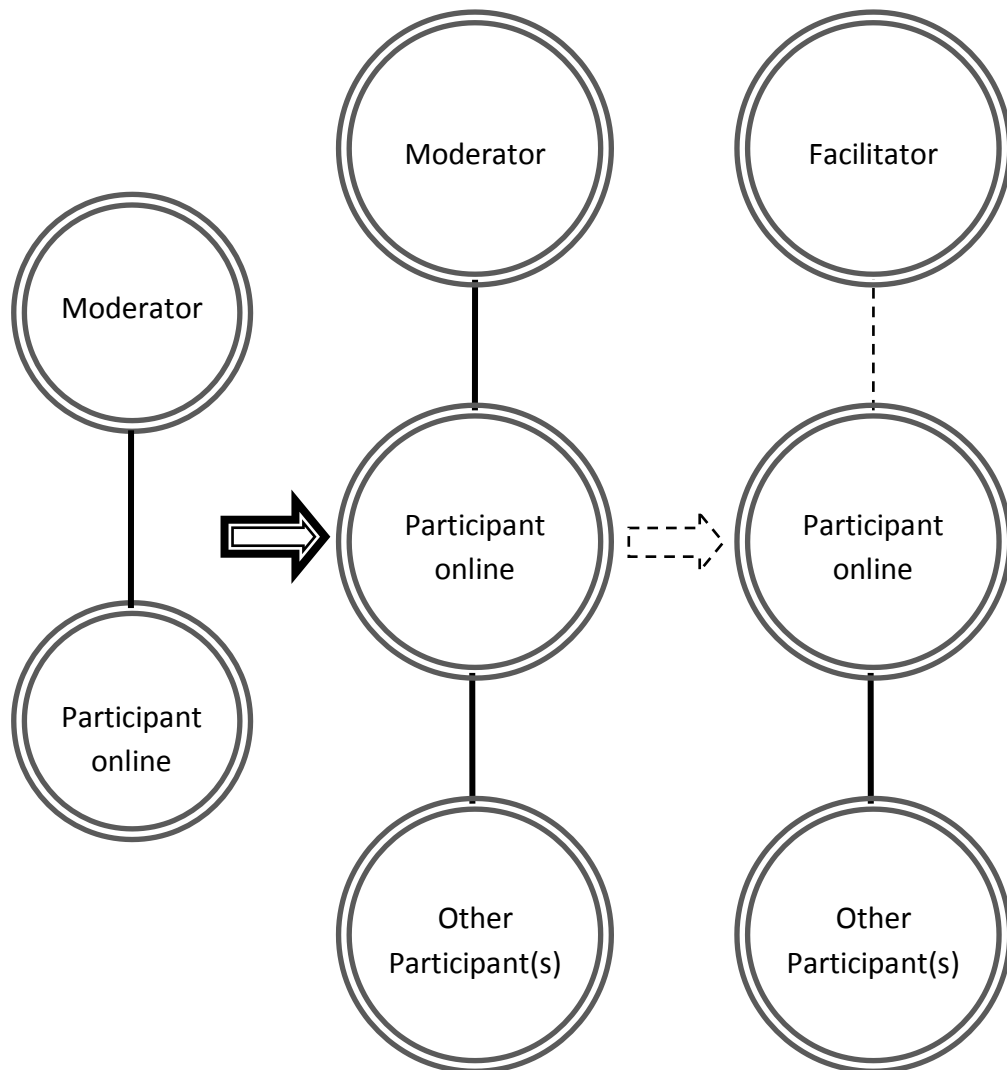


**Figure 6.7**          **The modes of interaction revisited**

While chapter 5 in general indicates an effective confirmation of the interaction between the participants individually with the moderator, there is no such pattern established for interacting with other participants, primarily or generally. As a result, the framework

should be placed under significant review of application in future studies, as indicated by figure 6.8.
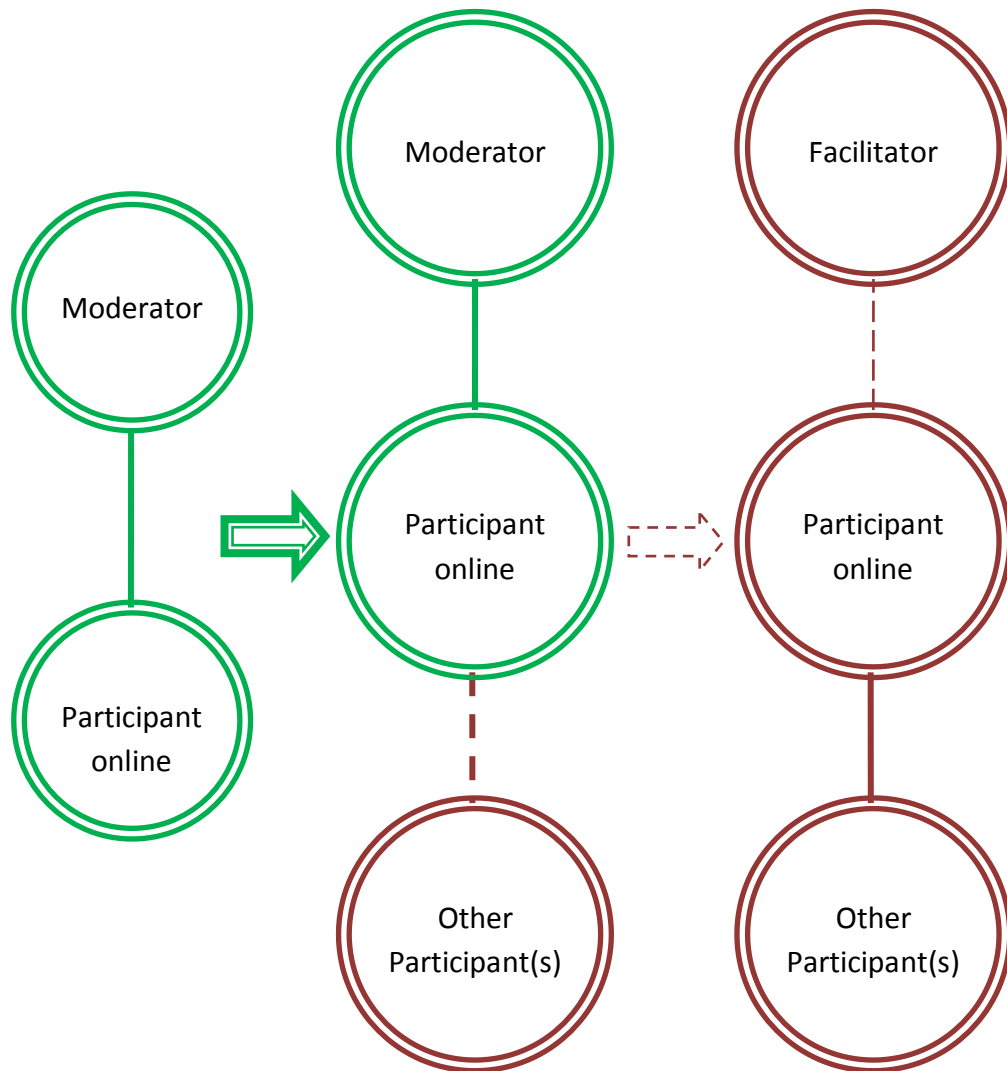


**Figure 6.8**         **The modes of interaction addressed**

On the basis of the need to review the pattern, and indeed to promote peer interaction and support as a greater aspect of an investigative framework, this could be refined further, as figure 6.9 indicates.
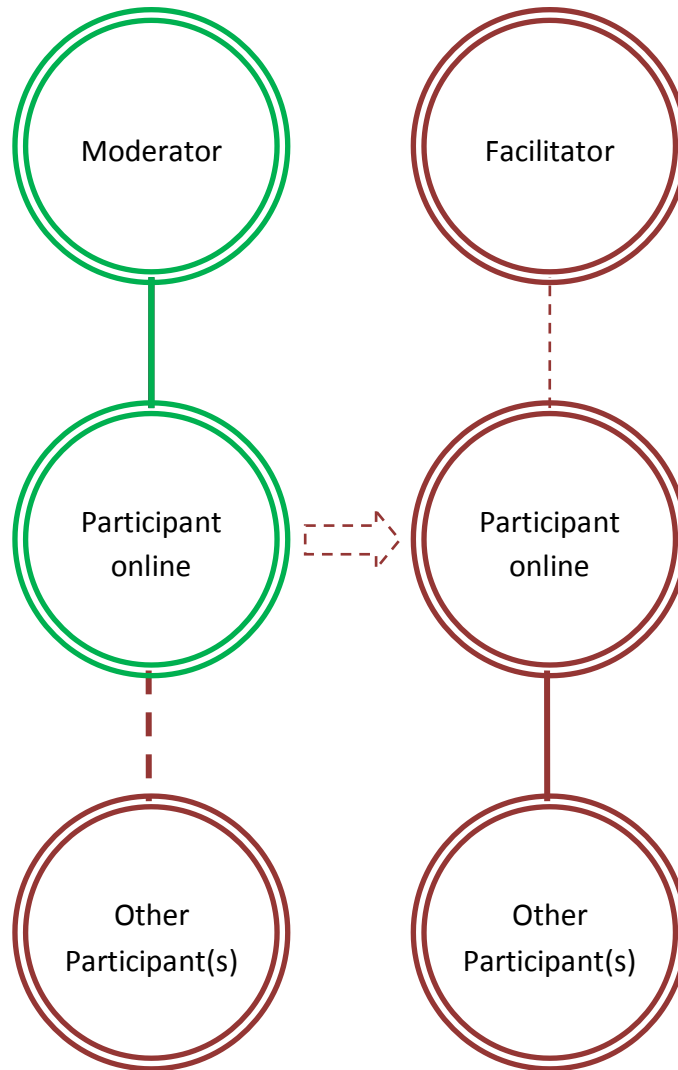
**Figure 6.9          The modes of interaction addressed and simplified**

The framework overall, while in need of practical review for the purposes of peer-interaction, was at least successful in engaging with participants on an individual level. While there is a lack of evidence for the peer-interaction related elements in this study, that is not a definitive statement on the nature of peer-support or peer interaction within an academic or educational context. Lack of evidence is not in and of itself an indicator or proof of non-existence, only that there is no evidence on this occasion. It can be hoped that

future studies will be able to use, amend, or adapt the investigative framework in a fashion that will generate a more definitive response to the subject.

**6.6          Limitations of this study**

There were a number of factors which may have impacted on or limited the findings of the research, particularly in regards to the data gathering.

The first issue, as indicated in section 5.2 is the relatively small sample size. While studies have been performed with small sample sizes (such as Boland and Day, 1989), the small number of participants necessitated that a case study process be utilised rather than being able to take a more representative and nuanced view of the greater population. As an adjunct to this issue, the use of one location only would also be a factor – even if there was a larger sample size from Waterford Institute of Technology, it would not have been entirely representative of the wider third level education SLD population. While other institutes were invited, with some participating, no participants from these institutes joined or made contact in regards to the participation.

An extension of this would be the relatively short timeline used as the basis for this study. This limitation has two tiers:

- The first is the level of time for administration to incorporate additional institutes into the study. This issue is split between the potential requirement for additional ethical approval from the institute, or in allowing enough time to work around significantly strained and tight schedules for the relevant officers. A longer timeline which brings additional institutes into the project over time would be a potential solution for this, as it would also allow time to build proof of concept with the core sample, and in so doing create a destination location which eases their own resource management.

- The second tier is in regards to the operation of the network itself. As a testing period, one academic year would suit. In order to build and develop trust and working relationships with the participants, as noted in section 6.2, to say nothing of allowing time for inter-participant relationships and peer support to emerge, a longer timeline would be preferable. This would also allow significantly more room to radically alter the design and form of the network to meet participant needs.

Some demographics such as the mental health population were also excluded from the process, as noted in sections 2.2.8 and 4.6, by necessity of their conditions as the primary researcher would not have been qualified to address their specific needs and domains. The level of research in question would also have an impact upon this decision, and further studies wishing to pursue a broader view of equity of support should look at means to extend this support to such groups if possible.

As mentioned in section 6.2, there would also be the need to reconsider the method of advertising for recruitment. While poster-based advertising has a long history of use and support within academic research, the realities of appealing to a population which has noted issues in regards to visual/ cognitive payload issues through a text-based medium presents its own set of complications. Separate or additional atypical drivers for sample recruitment would be recommended.

There is also the factor of the feedback mechanism used to gauge the participant experience. While non-invasive and theoretically convenient for the participants, it lacked an immediacy of response that slowed the adaptation process and may even have contributed to the participants increased passivity. The reduced social obligation was, in this case, much easier to ignore, leading to the majority of the participants not returning the final (and incentivised) questionnaire. A face-to-face interview may have in this case more suitable, but it would need to have both been fully established as a requirement at the first meeting (which presents an ethical concern) and have followed a more engaged participation group.

## 6.7        Closing Remarks

Many questions remain unanswered at this stage as regards to the efficacy of online support systems enabling peer learning for people with SLDs. At a base level, they can certainly be

supported through them, and indeed respond positively. From an infrastructural perspective it also makes sense in terms of maximising resources while minimising costs - once a site is built, after all, it remains and only needs upkeep. Even taking updates and adjustments into account, there is a significant pragmatic effectiveness. This however is a systemic issue which doesn't address the more critical human-centered factors. Similarly, assuming that the shape of the entity is set would also be problematic, since responsiveness to emergent conditions is vital to enable both the engagement and the success of the cohort in question.

If this research can indicate nothing else, it is that deeper means of communicating with, engaging with, and integrating with the SLD community is vital. Rather than reinforcing or enabling a sense of difference, normative researchers should look towards highlighting similarities instead. While this may not remove the condition existing within the person, it will at act as a means of redefining a sense of identity that is may very easily be left fragile by experience and in need of buttressing. While there is little debate in the merit of people with SLDs as a marginalised or emotionally affected community, the implications of the barriers to engagement present cause for concern. Due to their prior experiences, this population is mindful of protecting themselves and at the same time are placed in a position of vulnerability. Carew et al. (2011) noted the need for Existentialist empowerment and the promotion of Humanist values in systems development, and how this often conflicted with dominant Technocentrist and Industriofatalist thinking. Marginalised and disempowered communities must therefore be empowered and emancipated from debilitating and fatalist tendencies, such as learned helplessness and passivity, as seen in this study, to further their own values and needs. Nevertheless, we have to be mindful that there is an innate

arrogance in trying to emancipate "others" (Kincheloe and McLaren, 2000). Technology should be useful, elegant and desirable – people should want to use it rather than being compelled to do so (Sharples, et al., 2002).

Contextual online learning environments – or other support systems – should therefore seek to provide the communities they serve with the accessible means to, wherever possible, emancipate themselves. Systems engagement, however well-meant, cannot be forced without the risk of exacerbating the attributional factors which lead to the extant passivity and disenfranchisement in the first place. Instead, an open and patient user-led dialogic process which invites participant feedback is necessary, preferably with a significant time frame apportioned to take the aforementioned hesitancy and vulnerability into account. Building trust is a key aspect of this if a normative researcher or research team is to engage with and assist the population in a meaningful way. Building a framework through which this dynamic can be developed may be an excellent start, but it must be considered as a tool or adjunct to the greater goal, much in the same was as language we use in building this communication, itself another thing which both drives change and itself must be changed in the process. Without reshaping the language that itself shapes and reinforces established social strata, roles, perceptions, and positions, we remain at risk of an abiding state of cultural oppression (Oliver, 1992, 2002).

Ultimately, any actions taken to help, support, emancipate, or enable the SLD population should not be withheld, but considered. As becomes increasingly apparent over time,

actions have consequences both predictable and unforeseen – our duty of care then is to work towards the former in a positive and beneficent fashion while also remaining vigilant for the latter, ready to act where necessary. Better still, we should seek to engender a culture of agency where we do not need to act, as the action – irrespective of the outcome – will be taken by the very people who will experience the impact firsthand.

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**Appendix A**

# The Informed Consent Form

**Consent Form**
An investigation into human-centred peer-support systems through ICT for
students with Specific Learning Difficulties.

*Primary Investigator: Brian Caffrey (brian.m.caffrey@gmail.com)*
*Supervisor: Dr Peter Carew (pcarew@wit.ie)*

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I am invited to participate in this research project which is being carried out by
Brian Caffrey. My participation is voluntary. Even if I agree to participate now,
I can withdraw at any time without any consequences of any kind.

The study is designed to investigate the potential benefits of using information
communication technology (or ICT) to create peer-support networks for
students with specific learning difficulties (or SLDs).

If I agree to participate, this will involve me logging into the peer-support
network as my time and college schedule allows. While there, I can post
questions, look for help from my peers on the network or just socialise online
as I do on websites like Facebook. I can also use the system from home (but I
must remember this is not a substitute for class and regular study!)

I will potentially benefit from having access to academic supports outside of
my timetable and also having a confidential environment where I can discuss
issues with other participants going through similar things. I will also be able to
avail of any learning resources that are developed through the network.

While using the support network, I agree to act in a polite and courteous
manner, just as I would in a normal college or social environment. I will at no
stage discuss any personal information mentioned by my peers outside of the
network or in public. I am also aware that bullying or abusive behaviour will
not be tolerated: if at any point the behaviour of people on the network upsets
or hurts me, I should notify the primary investigator immediately. A three-strike
rule will be in place for anti-social behaviour, following which the abusive party
will find their access blocked for a week. Repeated abusive behaviour may
see the offender banned from participation.

Any information or data which is obtained from me during this research which
can be identified with me will be treated confidentially. This will be done by
scrambling the data and splitting it over two or more encrypted hard drives.
All participants will be assigned fake names which will be used in all
discussion and documentation of the findings. The data will be kept securely
in the post-graduate research area.

Data from this research project may be published in future. No personal data
will be used in any subsequent publication. The original data will be available
only to the present primary investigator, Brian Caffrey, and the research
supervisor, Dr Peter Carew. Data will be made available on request to

relevant authorities in the college such as the disability officer to ensure that participants are not being harmed or exploited.

Materials that are sensitive will be kept in a secure location in the School which will be locked when the researchers are not present.  If copies are made available to researchers elsewhere, similar conditions regarding the storage and use of recordings will apply.  No personal data will be made available.

If I have any questions about this research I can ask Brian Caffrey, the primary researcher, at any time (phone 087 1635232, or email *brian.m.caffrey@gmail.com*).  I am also free, however, to contact any of the other people involved in the research to seek further clarification and information, such as Dr Peter Carew, the supervisor of the project (pcarew@wit.ie).

*Signature of research participant*
I understand what is involved in this research and I agree to participate in the study. [*I have been given a copy of this consent form to keep.]*


----------------------------------------                  ----------------
Signature of participant                               Date


*Signature of researcher*
I believe the participant is giving informed consent to participate in this study


----------------------------------------                  ---------------------
Signature of researcher                                Date

### Addendum to the prior Informed Consent

I have decided to withdraw from the study. I understand that this means my
access to the peer support network will be blocked for the remainder of the
study. If I would like to resume participation in the study, I should contact the
primary investigator, Brian Caffrey, at *brian.m.caffrey@gmail.com*.

*Signature of research participant*

---------------------------------------          ----------------
Signature of participant                          Date

*Signature of researcher*

---------------------------------------          ----------------------
Signature of researcher                           Date

# Appendix B

# The Pilot Phase Questionnaire

**Student Jam Questionaire**

| Scale | | | | |
|---|---|---|---|---|
| 1: Very bad | 2: Bad | 3: No opinion | 4: Good | 5: Very Good |

On a scale of 1 to 5, how would you rate The Student Jam website on the following:

| | |
|---|---|
| Design (how it looks) | |
| Easy to use | |
| Easy to access | |
| Options for adjusting the site to your preference | |
| The information provided | |
| The level of support offered | |
| Fitness for purpose | |
| Overall usefulness | |

On a scale of 1 to 5, how would you rate The Student Jam forum on the following:

| | |
|---|---|
| Design (how it looks) | |
| Easy to use | |
| Easy to access | |
| Options for adjusting the site to your preference | |
| The information provided | |
| The level of support offered | |
| Fitness for purpose | |
| Overall usefulness | |

1. What do you like about Student Jam?


2. What do you dislike about Student Jam?


3. What would you like to see added to Student Jam?


4. What would you like to see removed from Student Jam?


5. What would you like to see changed in Student Jam?


6. What would make you use Student Jam more?


7. What would make you use Student Jam less?

# Appendix C

# The Main Phase Questionnaire

This is an end of term survey for Student Jam. All contents and answers given will be kept completely confidential. No identifying information will be associated with any published findings. You are invited to be as absolutely honest as you wish, and there will be no repercussions for you in doing so. Your honest feedback will help both this research and any research that may follow in creating new and better supports for you and students like you. Please be sure to answer as many questions as you can.

There are two types of question in this survey: the first just requires that you make a selection of one or more answers – just mark an 'X' in the appropriate box; the second type looks a little bit deeper to see what matters to you personally. Feel free to write as much as you want for these – whether you write a line or a small novel, your answers are invaluable.

As a gesture of my appreciation, everyone who completes and returns this survey will get a gift voucher / token of their choice. If it is completed and returned by the last day of June, you will get a €20 voucher; if it is returned by the end of July, you will get a €15 voucher; and if it is returned by the end of August, you will get a €10 gift voucher. What you write in the survey will have no effect on the amount, so please don't worry about being polite: whether you want to be brutal or kind, the most important thing is to be honest.

If you have any questions, please do not hesitate to contact me by phone on 087 1635232 or by email at brian.m.caffrey@gmail.com. If you would like, we can also arrange to meet in person if there is anything you would like to discuss, if you have any concerns about the research, or if you would like to speak frankly in a secure and confidential setting.

Your comfort and convenience is of the utmost importance in this.

Regards,

Brian Caffrey

1. What is your gender?

| Male | Female |
|---|---|
|  |  |

2. What age are you?

| 17 – 22 | 23 – 28 | 29 – 34 | 35 – 40 | 41 – 46 | 47 – 52 | 53 – 58 | 59+ |
|---|---|---|---|---|---|---|---|
|  |  |  |  |  |  |  |  |

3. What is your Specific Learning Difficulty (SLD)?

|  |
|---|
|  |

4. Do you live in a:

| City | Town | Village | Countryside |
|---|---|---|---|
|  |  |  |  |

5. What year are you in?

| First year undergraduate | Second year undergraduate | Third year undergraduate | Fourth year undergraduate | MSc postgraduate | PhD Postgraduate |
|---|---|---|---|---|---|
|  |  |  |  |  |  |

6. Which Campus are you on?

| College Street | Cork Road |
|---|---|
|  |  |

7. Would you describe yourself as experienced with computers ?

| Yes | No |
|---|---|
|  |  |

8. Would you describe yourself as experienced with the internet?

| Yes | No |
|-----|-----|
|     |     |

9. Would you describe yourself as experienced with social network sites?

| Yes | No |
|-----|-----|
|     |     |

10. If so, which social network sites do you use?

| FaceBook | Twitter | Bebo | Diaspora | Other |
|----------|---------|------|----------|-------|
|          |         |      |          |       |

11. Do you own any of the following? Please select as many as are appropriate.

| Mobile Phone | Smart Phone | MP3 Player | Tablet computer | Laptop computer | Desktop Computer | |
|--------------|-------------|------------|-----------------|-----------------|------------------|---|
|              |             |            |                 |                 |                  | |

12. Where do you have internet access? Please select as many as are appropriate.

| At home | At work | At college | On your mobile phone |
|---------|---------|------------|----------------------|
|         |         |            |                      |

13. Did you like Student Jam?

| Yes | No |
|-----|-----|
|     |     |

14. Did you like the idea of Student Jam?

| Yes | No |
|-----|-----|
|     |     |

15. What did Student Jam do right?

16. What did Student Jam do wrong?

17. Did you feel like you could make a request or post on Student Jam?

| Yes | No |
| --- | --- |
|  |  |

18. What would you have liked to see added in Student Jam?

19. What would you have liked to see removed in Student Jam?

20. If a new student support website was created, what would you like to see in it?

21. What makes you use a website more frequently?

|  |
|---|
|  |

22. What makes you use a website less frequently?

|  |
|---|
|  |

23. Did Student Jam being moderated by someone without a Specific Learning Difficulty (SLD) affect how you used the site?

| Yes | No |
|---|---|
|  |  |

24. Would you use the site more if it was run by someone with an SLD?

| Yes | No |
|---|---|
|  |  |

25. Do you use the supports that are already available in college?

| Yes | No |
|---|---|
|  |  |

26. If so, which ones?

|  |
|---|
|  |

27. Do you think that they could be based online?

| Yes | No |
|---|---|
|  |  |

28. What kind of supports would you like to see, either offline or online?

| Additional tuition (Grinds) | Academic Support tutor | Weekend support | Phone support | Email service | Additional seminars |
|---|---|---|---|---|---|
|  |  |  |  |  |  |
| Group training sessions | Presentations | One-to-one training sessions | Learning Support classes | Online training | Subject-specific support |
|  |  |  |  |  |  |

29. If there are any not listed above, please feel free to add them here:

|  |
|---|
|  |

30. Would being provided with an introductory package of information about supports at the beginning of the college year be useful to you?

| Yes | No |
|---|---|
|  |  |

31. If yes, what would be useful to have in this pack?

|  |
|---|
|  |

32. Is there any department you feel should do this? Please list as many as you like.

|  |
|---|
|  |

33. How does Student Jam compare with the supports you receive in college?

<br>

34. How do these supports compare with those you receive elsewhere, such as in work, secondary school, or other locations?

<br>

35. If this project was expanded nationwide, would you use it?

| Yes | No |
| --- | --- |
|  |  |

36. Do you enjoy college?

| Yes | No |
| --- | --- |
|  |  |

37. What do you like most about college?

<br>

38. What do you dislike most about college?

<br>

39. Do you feel that college allows you to achieve your goals?

| Yes | No |
| --- | --- |
|  |  |

40. Do you feel that you get adequate support from :

| Classmates | Lecturers | Your school | Disability Office | Student Union |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |

41. How well do the classes at WIT meet your learning needs?

| Very good | Good | No opinion | Poor | Very poor |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |

42. How does WIT compare with other education institutes to you have been to?

| Very good | Good | No opinion | Poor | Very poor |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |

43. Please feel free to comment on why:

|  |
| --- |
|  |

44. Are classrooms distracting?

| Yes | No |
| --- | --- |
|  |  |

45. If so, how?

|  |
| --- |
|  |

46. Do you have trouble meeting deadlines?

| Yes | No |
|-----|-----|
|     |     |

47. Do you have trouble with your workload?

| Yes | No |
|-----|-----|
|     |     |

48. Do you prefer to use computers in the classroom?

| Yes | No |
|-----|-----|
|     |     |

49. From most important to least, how would you rank these in importance?

| Planning | Discipline | Methods | Evaluation |
|----------|-----------|---------|-----------|
|          |           |         |           |

|  | Strongly agree | Agree | No opinion | Disagree | Strongly disagree |
|---|---|---|---|---|---|
| Student Jam respected my personal rights and needs. |  |  |  |  |  |
| I am often expected to do things that are not reasonable in college. |  |  |  |  |  |
| I did not have enough time to use Student Jam during the year. |  |  |  |  |  |
| There was a friendly feeling between users on Student Jam |  |  |  |  |  |
| Other students and lecturers respected my needs. |  |  |  |  |  |
| People understand and facilitate my SLD. |  |  |  |  |  |
| It was easy to access Student Jam online. |  |  |  |  |  |
| Student Jam is a good place for learning and personal development. |  |  |  |  |  |
| WIT does not help students with SLDs. |  |  |  |  |  |

| | Strongly agree | Agree | No opinion | Disagree | Strongly disagree |
|---|---|---|---|---|---|
| The Student Jam team was interested in helping me. | | | | | |
| I know exactly what is expected of me on Student Jam. | | | | | |
| Student Jam frequently did not help me. | | | | | |
| The structure in WIT allowed me to learn and discover new things. | | | | | |
| Student Jam is well-organised and designed. | | | | | |
| I was happy to spend time on Student Jam. | | | | | |
| Students with SLDs need to take charge of their education. | | | | | |
| WIT is just a place to study and is separate from my personal interests. | | | | | |
| The needs of the institute were more important than my own personal interests. | | | | | |
| Overall I am satisfied studying in this college. | | | | | |
| Overall, I am satisfied with the support offered by Student Jam. | | | | | |

Is there anything else you would like to add in general?

Thank you for taking the time to complete this survey and for taking part in Student Jam.

Have a great Summer!

<u>**Appendix D**</u>

# Participant Group-Email Correspondence

**Standard email contacting institute heads for permission to advertise**
**Subject:** Query
**Date:** Various

Dear XXXX,

My name is Brian Caffrey and I am an MSc Research student here in WIT. I am currently in the process of recruiting participants for my MSc research project Student Jam: Investigating the potential for peer support networks through ICT for students with specific learning difficulties. The project is meant to act as an additional academic support for students with specific learning difficulties (such as dyslexia, ADD and the like).

Part of my recruitment process per my ethics board approval involves using posters to advertise for participants, so I was wondering if it would be possible to place an advert on the WIT website's news section or A4 advert on your noticeboards for any students to whom it might be useful?

If there is anything you need to check or clarify before being able to answer, please do not hesitate to contact me at this email or at 087 163 5232.

Regards,
Brian Caffrey

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**Standard email for participants when joining**
**Subject:** Student Jam
**Date:** Various

Hi XXXXX,

You're now all set up on Student Jam. To get to the website, just go towww.studentjam.org. If you would like to go directly to the forums, the address iswww.studentjam.org/forum.

Your user name is 'XXXXXX' and your password is 'YYYYYY' (I'd recommend changing that to something you'd prefer as a password)

If you have any problems with the site, give me a shout by this email or on the mobile: 087 163 5232.

Regards,
Brian

**Email used to launch both Main Phase and pilot phase questionaire**
**Subject:** Happy New Year from Student Jam!
**Date:** 16/01/12

Hi XXXXX,

I hope you had a good Christmas break and that the new year has so far gone your way! I'm just emailing to say thank you again for agreeing to participate in Student Jam. Hopefully it will be able to offer you some support over the coming semester. There's a few extras that I will be adding in to make it more useful and exciting for everyone which I should hopefully be announcing towards the end of this week, so stay tuned for that.

In the mean time, I've attached a short questionnaire for everyone who has signed up so far. Use of the site wasn't huge last semester (which I expected), so I'd love to get your thoughts on how I can make it something that you would find useful and engaging. It's very short and should take only a few minutes to fill in (I hate it when people ask you to fill out pages and pages of questions and you lose half the day, so I would never ask anyone to do that). That said, if you have any problems with the form, let me know and we'll sort it out.

As a small thank you, everyone who fills out the questionnaire and sends it back to me by Friday the 27th of January will be put into a raffle for a €10 voucher to the shop of their choice (so it could be a book token, a One 4 All voucher, phone credit... whatever the winner would like!) If you haven't checked the site out in a while, it's a good excuse to have a look!

Anyhoo, here's to a great 2012 for everyone.

Regards,
Brian

**Update email**
**Subject:** The Student Jam Prize Draw!
**Date:** 20/01/12
Hi XXXXX,

As promised with my email earlier this week, I have some good news for Student Jam participants. Starting in February and running up to the May exams, there will be a prize draw for all members at the end of every month. All you have to do to be in with a chance to win is to post once a week on anything you'd like. For more info, check out http://www.studentjam.org/forum/viewtopic.php?f=8&t=33.

Off the back of that, the €10 voucher mentioned in the previous email for the questionnaire is now a €20 voucher (and given that the number of Student Jammers is starting to grow, the odds are very much in your favour right now as this draw will only be for anyone who signed up before the end of semester 1)

As ever, if you have any questions, please don't hesitate to give me a call, text, or email.

Regards,
Brian

**Email reminder for questionnaire deadline**
**Subject: Re:** The Student Jam Prize Draw!
**Date:** 26/01/12

Hi XXXXX,

Don't forget that tomorrow is the deadline to be in with a chance to win a €20 gift token of your choice when you email me your filled-in Student Jam feedback form. It's only a few questions on a single page, but it could mean a nice treat for yourself! I've attached another copy to this email just in case. As ever, if there are any problems, give me a shout.

Regards,
Brian

---

**Follow-up email per technical issues noted by Juliet**
**Subject: Re:** The Student Jam Prize Draw!
**Date:** 26/01/12

Hi everyone,

Some students have reported an issue with the questionnaire as it was set in Word 2010 (which can be finicky as heck) - because the point of Student Jam is to make sure everyone can have their say, I've attached a Word 2003 version to this email for anyone having trouble (and if trouble remains, let me know).

In the meantime, and to give everyone a chance, I'll push the deadline to email back the form to next Tuesday, the 31st of January. If you have any questions, just let me know (and I hope you're keeping well).

Regards,
Brian

**Facebook Page launch**
**Subject: Re:** Student Jam on Facebook
**Date:** 28/01/12

Hi everyone,

Because it was requested - and it's a good idea - the Student Jam facebook page is now up and running.

https://www.facebook.com/StudentJam

I had held off because of the college Facebook policy (particularly the block on it between 9am and 3pm), but now that the page has been requested, I am happy to put it up. If there is anything you might want to ask but don't want it posted there, the Student Jam Secret Facebook Group is also available - just let me know if you would like to be added to it. The main site will also remain active.

I'll be putting your recommendations for the site in place over the next few days - the first few changes are addressed at http://www.studentjam.org/forum/viewtopic.php?f=8&t=35. If anything else occurs to you, let me know (and be as sharp as you need - I won't know you like or dislike something unless you tell me!) There's still a few forms yet to come back in, so there may be even more changes I don't know about yet.

Thanks again for all your feedback!

Regards,
Brian

---

**Standard non-winner notification for monthly draws**
**Subject:** Re: Student Jam [month] draw
**Date:** Various

Hi XXXXX,

The results of the first Student Jam draw are in. Unfortunately, you didn't win this time, but there are four draws yet to happen (come the end of February, March, April, and May), so there is opportunity aplenty yet. All you have to do to enter is post once a week on anything at all anywhere at all in the Student Jam forums (or the Facebook page).

Regards,
Brian

**End of main phase email**
**Subject:** Student Jam updates
**Date:** 28/05/12

Hi everyone,

The Summer is here and the exams are done - well done on getting through another year! I will have my fingers crossed that you get the results you're hoping for.

As we're at the end of the semester, this phase of Student Jam is now wrapping up, which leads us to some news and updates

As there was no posting on Student Jam during May, the monthly draw cannot happen (as no one is eligible for it.) But it leads to some good news in a way: I'm emailing everyone a survey to get your thoughts on Student Jam overall. It's mostly a yes/no style survey, so it shouldn't take too long to fill in.

As a gesture of my appreciation for doing so, everyone who completes the survey and sends it back to me by the end of June will get the €20 voucher of their choice(just let me know in your email what shop or service you would like your voucher for and I'll get it done for you). If you run a bit late, you can still get a €15 voucher for getting it back by the end of July, or a €10 voucher if you get it back to me by the end of August.

To avoid the technical problems we had in January, the survey is being kept as a simple Word document, but if you have any technical problems whatsoever let me know and we'll sort something out for you.

In case anyone needs it, Student Jam will be running over the Summer, so if you have any Summer projects, additional assignments, late exams, or anything of the sort, there will be support on hand.

Beyond that, I look forward to hearing from you! I'll send out a reminder when we get towards the June deadline, but if you have any questions or comments in the meantime, by all means let me know!

Thank you for taking part in the Student Jam project - you have worked hard and provided me with a lot of interesting information along the way, which will hopefully lead to helping a lot of people. All of you rock and I wish you every bit the best with where you go from here.

Most important of all, have a great Summer!

Regards,
Brian

**Main phase questionnaire reminders**
**Subject:** Student Jam reminder
**Date:** 21/06/12

Hi XXXXX,

Just a quick reminder that if you would like to get the best Student Jam thank you prize, be sure to get your survey in by the 30th of June. If you have any questions, comments, or technical issues, send me a text or an email!

Thanks again for participating in Student Jam - have a great Summer!

Regards,
Brian

---

**Date:** 23/07/12

Hi XXXXX!

I hope you've been having a great Summer. Don't forget that if you have any Summer work or want to prepare for the next semester, Student Jam is on hand to help as you need it.

As well as that, the next deadline for the surveys is coming up at the end of the month, so if you'd like to get the best Student Jam reward be sure to get it back to me before then. As ever, if there are any problems, let me know and we'll sort it out!

Regards,
Brian

---

**Date:** 20/08/12

Hi XXXXX,

I hope your Summer is going well! I've a little bit of a Back To College treat this update: anyone and everyone who gets their Student Jam survey back to me before the start of the new college year this coming September will get the full €20 gift card of their choice! Not €15, not €10, but €20 to spend as you'd like in the shop of your choice! So for anyone who has yet to get it in, that's double the reward!

As ever, let me know if you've any questions or comments (or if you would like me to send the survey to you again!)

Regards,
Brian

# External Institute Standard Correspondence

INSYTE: Centre for Information Systems and Technoculture
Luke Wadding Library
Waterford Institute of Technology
Cork Road Campus
Ireland
Phone: 087 163 5232
Email: brian.m.caffrey@gmail.com

22 January 2012

Dear XXXXXXXXXX,

My name is Brian Caffrey and I am an MSc Research Student at Waterford Institute of Technology. I am currently researching the potential use and impact of information communication technology in helping students with specific learning difficulties. In order to follow this, my work has taken the form of an action research project using a website of my own devising called Student Jam.

The site is, at its core, a private, contextualized, gated and moderated forum where students with disabilities can discuss matters relating to their academic work, their issues and experiences with their learning difficulties (if they wish to do so), or even just chat informally. As shorthand, I have described it to interested students as 'Facebook for learning'. The key caveat is that while I am present to moderate behavior and aid students with non-course related issues, such as referencing, formatting, structure of work, I cannot help them with anything course-related; the intention of this is to motivate the students to help each other, helping to develop their sense of agency in their education, and building a peer-support network.

The project has recently moved into the data gathering phase and recruitment is being run on an ongoing basis. If it was something that you feel might be of benefit to XXXXXX students, I would be happy to make the resource available. It would be an excellent opportunity for everyone involved: by sharing the resource with other institutions, it will allow for a greater degree of intra-college networking and cooperation; for the study, it will allow for a more representative sample of the target population; most importantly, for the students it will mean additional support, a wider peer base of people facing similar socio-emotional issues, and the chance to build lasting relationships, be it academic, professional, or personal.

The project has been granted ethical approval in WIT, but as regards student disclosure and protection if nothing else, I would understand entirely if you would require me to take a similar step in regards to XXXXX students if they were to participate.

As regards to my own credentials, I have worked as a learning support tutor for students with specific learning difficulties in WIT for three years – in many respects, the research is putting into practice much of what I have observed and experienced in working with this population. Should there be anything you need to clarify or assess, I would be happy to field any questions you might have by phone, email, or in person as would suit. I look forward to our future correspondence.


Sincerely,
Brian Caffrey

**Follow-up email for other institutes**
**Subject:** Re: Student Jam [month] draw
**Date:** 27/02/12

Dear XXXXX,

I just thought I should touch base with you and see if you had a chance to go through the correspondence I sent you on the 22nd of January of this year in regards to my MSc research project on developing IT supports for students with specific learning difficulties.

I'm happy to answer any and all questions you might have in regards to the project; if by any chance you have not received the letter, I would be happy to resend it to you by your preferred method.

In any case, thank you for your time: I look forward to any and all future discussion.

Regards,

Brian Caffrey

**Poster Submission for Research Day 2011 at Waterford**
**Institute of Technology**

# An investigation into human-centred peer-support systems through ICT for students with Specific Learning Difficulties.

Brian Caffrey

## Introduction

Often referred to as a Learning Disability or Disorder, Specific Learning Difficulties (SLD) are 'a diverse group of conditions that cause significant difficulties in perceiving, processing and/or producing auditory, visual and/or spatial information.' (TCD, 2010)

An SLD is not an intellectual or general learning difficulty: students with SLDs are of average or higher intelligence that are prevented from performing to the full extent of their capabilities by perceptual conditions outside of their control. The conditions cover a wide range of issues, most commonly Dyslexia, ADD/ADHD and the Autism Spectrum Disorders. People living with SLDs tend to suffer from related stigma, both self- and externally-generated.

In an information-heavy setting, students with SLDs are at a natural disadvantage, academically, technically and professionally. With the drive to create a knowledge-based economy and the growth of social media, these students are at risk of being left even further behind.

*As this research is ongoing at present, findings and conclusions are pending.*

## Research Objectives and Questions

- To initiate self-sustaining peer-support networks for students with SLDs.
- To develop actionable education frameworks, adaptive learning strategies and reusable learning resources (RLR) for same.
- To develop these frameworks in a cost-effective and easily replicable state.
- To provide the students opportunity to assemble scripts and frames for schemata that can be used outside of the network and education setting.
- To promote and enhance the retention, resilience and performance of students with SLDs.

The following working research questions have been developed through the domains of Integration, Communication and Imagination to address these objectives:

- To what extent can the research enable the integration of SLD students into normative populations?
- How can ICT be adapted in order to promote a greater capacity for communication/interaction in the SLD population?
- To what extent can ICT and peer-support networks be utilised to promote applied imagination/sense-making in the SLD population?

## State of the Art

The majority of SLD research focuses on primary and second-level education populations at the cost of adult and third level education populations. With the increased emphasis on digital media literacy (Johnson, Smith, Willis, Levine and Haywood, 2011), this population is in critical need of prioritisation.

Learning environments are typically designed for normative populations and adapted at a later date for minority/fringe communities (Meyer and Rose, 2005). In order for the peer-support network to succeed, human reciprocity, the dismantling of barriers (Williams, Banning and Kennedy, 2007) and 'the social component of learning' must be promoted (Browne, 2003).

Due to the wide range of SLDs and significant variance of symptoms therein, a Universal Design for Learning should be adopted (Meyer and Rose, 2005). In order to address the socio-emotional domains, the social model of SLDs should be incorporated in addition to the medical/biological. (White, 2002)

## Propositions & Hypotheses

- Given that students would be the most aware of their own issues and needs, following a user-centered approach would be most applicable.
- As the study progresses, the research domains of integration, communication and imagination will shift from a social model to an applied/practical model.
- The role of the researcher will also adapt as the study progresses, from facilitator in the early stages to observer by the conclusion.

### Integration

*Hypothesis 1:* The development of co-ordinated learning environments will enhance the performance, retention and resilience of students in third level education.

*Hypothesis 2:* ICT can be used to safely address and develop the social and emotional domains of students with SLDs.

### Communication

*Hypothesis 1:* Peer Support through social networks can act as a medium to develop communication and intra-personal skills.

*Hypothesis 2:* Through the development of communication skills, academic performance and capacity for self-advocacy should be improved.

### Imagination

*Hypothesis 1:* ICT and peer-support networks can aid in the development of social imagination / understanding of cause and effect.

*Hypothesis 2:* This understanding then can be used to develop applied imagination and the capacity for problem-solving.

## Anticipated Methodology

- The initial application will look at developing generic skills necessary for college work (e.g. referencing, formatting, writing skills).
- As student needs become more focused and explicit, the framework will shift to a specialised, subject-specific curriculum design.
- The project will initially use a shared database/message board and an Instant Message (IM)/communication conference system. Additional functions and software to be added as required.
- The project will be pilot-tested in Semester 1, 2011, following needs assessment from student focus group(s).
- Learning analytics will be used to gauge student usage, uptake and progress. Thematic grid charts and cyber-ethnographical methods may also be applied to assess context of findings.

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Centre for Information Systems and Technoculture

INSYTE

Waterford Institute of Technology

www.wit.ie/insyte

# SESEM 2011 Extended Abstract and Conference Paper based on this study

# An Investigation Into Human-centred Peer-support Education Systems for Students with Learning Difficulties

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## ABSTRACT

The primary objective of this research is to investigate the potential of developing peer-support networks, actionable education frameworks and independent learning strategies through information communications technology (ICT) for students with Specific Learning Difficulties (SLDs).

An SLD, often referred to as a Learning Disability or Disorder, is 'a diverse group of conditions that cause significant difficulties in perceiving, processing and/or producing auditory, visual and/or spatial information.' (TCD, 2010)  This is distinct from an intellectual or general learning difficulty, wherein the student's intelligence is affected: students with SLDs are of average or higher intelligence that are prevented from performing to the full extent of their capabilities by perceptual cognitive conditions outside of their control. Students with SLDs face an increased workload in comparison to their normative peers in acclimating to the workload due to the added complication of their impairment.

In spite of the needs being apparent, learning environments are typically designed with normative populations in mind and adapted at a later date for minority/fringe communities such as students with SLDs (Meyer & Rose, 2005), while the majority of SLD research and interventions focuses on primary and second-level education populations to the exclusion of adult and third level education populations and in spite of the increased emphasis on the development of a knowledge-based economy and digital media literacy (Johnson et al., 2011). This comparatively small scale of support comes into contention not just to the SLD population's entitlements per the Equality Act (Office of the Attorney General, 2004) and efforts by the National Development Plan and the European Social Fund (2006), it also has bearing on the often-overlooked socio-emotional domains (Department of Education and Science, 2001), including but not limited to the self-esteem, emotional development and the relationships of the learner.

In order to prioritise this population, their needs and requirements should be placed at the nascent stage of system development rather than as a secondary or tertiary consideration, hence the stated objective, the ideal outcome of which will be the improved retention, resilience and performance of the population. While supports do exist at third level education, they are most commonly operated on an individual level between student and tutor rather than a network. Additionally, these tutors rarely have an SLD themselves. The development of a peer-support network enables participants with a direct, personal experience to not only develop a greater agency for themselves but also their peers.

Key functions indicated by the literature include the promotion of human reciprocity, the dismantling of barriers (Williams et al., 2007) and 'the social component of learning' (Browne, 2003). In order to account for the wide range of SLDs and significant variance of symptoms therein, a Universal Design for Learning (UDL) approach should be adopted (Meyer & Rose, 2005). In order to address the socio-emotional domains, the social model of SLDs should be incorporated in addition to the medical, which tends to focus on the biological factors (White, 2002). The domains of Integration, Communication and Imagination were identified, based on the considerations of autistic-spectrum disorders. These domains form the basis of the research framework and hypotheses, investigating the extent the research can enable the integration of SLD students into normative populations; how ICT be adapted in order to promote a greater capacity for communication and interaction in the target population; and to promote applied imagination/sense-making in the SLD population.

The primary ethical concerns in regard to this research are the protection of the participants, their data and anonymity. Access to raw, personal or identifying data will be available to the primary investigator and supervisor only; any relevant party pre-authorised for access to confidential information regarding the participants (e.g. the disability officer) will also have access to this data on request to ensure transparency. All data collected must as a result be anonymised for usage in the study. Each participant will be assigned a pseudonym should there be a need to make reference to individual participants during the course of the study or in documentation outside of the raw data. All data stored will be encrypted and password-locked on an external hard drive rather than on a specific computer. The passwords and access to said data will only be held by the primary investigator and supervisor Furthermore, any online interaction between participants in the peer

support network this study develops will be through a gated system which requires authorisation by the primary investigator to join.

The study will be conducted at the Waterford Institute of Technology (WIT), and all participants will be students who have a Specific Learning Disability (SLD) as identified and vetted by the disability office in the Student Life and Learning unit at WIT. The participant age range is 18 years of age and up. There is no functional reason for an upper age range. All participants will be required to sign an informed consent form. In the interest of avoiding confusion, and taking into account the nature of some of the SLDs likely to be involved, the first function of the primary investigator will be to go through the informed consent form with the student and answer any questions they may have, offering full disclosure. In the event of a student younger than 18 years of age wishing to participate, parental consent will be sought.

The project will initially use a shared database/message board system to allow participants to interact with each other. An Instant Message (IM)/communication conference system will also be incorporated to allow online conversations in real time. All systems will be gated so as to prevent parties outside of the study from interfering with the participants or generating erroneous data. The network will initially be used to promote generic skills necessary for college work (such as referencing, formatting, writing skills). As student needs become more explicit and usage more frequent, the framework will shift to specialised, subject-specific curriculum design. Needs assessment can be performed both by using focus groups before constructing the system and by enquiry through the system periodically thereafter.

Provisionally, the methodology that will be employed is to have the primary investigator act as a facilitator within the network, promoting use of the system and contextual support which will be phased out as interaction between the network users increases. This role will be scaled back to that of a moderator ensuring that there is no abuse of the system or the users, and to be on hand as unforeseen or undesirable situations arise. During this period, students will be encouraged to engage with the peer-support network rather than rely solely on hierarchical systems, transforming them into active stakeholders. Performance metrics and learning analytics will be used to record and analyse student behaviour and interaction with and within the system: their usage, uptake and progress. Cyber-ethnographical methods may also be applied. Due to the acknowledgement of both the social and medical models, a mixed methodology approach is necessary: qualitative and quantitative data will be respectively sought, based on the data provided through the network and also through feedback from and debriefing of the participants over the course of the study. Inappropriate information provided by participants will immediately be referred to the research supervisor and dealt with accordingly. Any action taken will be jointly decided in conjunction with the supervisor and will adhere to WIT guidelines.

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# An Investigation Into Human-centred Peer-support Education Systems for Students with Learning Difficulties

**Brian M. Caffrey\*. Peter J. Carew\*\***

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**Abstract:** This research investigates the potential application and use of ICT in the development of peer-support networks centered on learners with Specific Learning Difficulties at third level education. Utilising a theoretical model based on both the social and medical models of disability, it is intended to develop a system that will allow learners to develop through interaction with their peers actionable education frameworks, adaptive learning strategies and reusable learning resources in a safe and contextualised learning environment. Primary research will be performed with the student population of Waterford Institute of Technology as a case study. The longitudinal goal is the improved retention, resilience and performance of the target population.

*Keywords: education, ethics, human-centred design, mixed methodology, specific learning difficulties.*

## 1. INTRODUCTION

In third level education, two elements can both dovetail and yet remain obstinately parallel: students and technology. Irrespective of their level of ability, student performance can and likely will at some point suffer problems in trying to learn or perform in an academic setting due to the impact of emotional and environmental stressors (Dyson & Renk, 2006). When said student has a Specific Learning Difficulty (SLD) in addition to the aforementioned pressures, that possibility becomes a distinct probability.

SLDs are 'a diverse group of conditions that cause significant difficulties in perceiving, processing and/or producing auditory, visual and/or spatial information.' (TCD, 2010) Dependant on country, SLD can also be taken to mean Specific Learning Disability or Disorder. An SLD is not an intellectual or general learning difficulty: students with SLDs are of average or higher intelligence that are prevented from performing to the full extent of their capabilities by perceptual cognitive conditions outside of their control. The conditions cover a wide range of issues, most commonly Dyslexia, ADD/ADHD and the Autism Spectrum Disorders.

This paper will look at the key factors involved in the development of a peer support network for third level students through information communication technology (ICT) and social media. Initially focusing on the background, context and justification of the subject matter, the paper will go on to address the research questions, objectives and framework which will shape the investigation. Following this, the ethical concerns and anticipated methodology in regards to the case study will be stated, closing with some final remarks.

### 1.1 Background

In an information-heavy setting, students with SLDs are at a disadvantage academically, technically and professionally thanks to the increased cognitive workload generated by the impeded assimilation of information, processes, interactions and of requirements (cf. AHEAD, 2011). With the drive to create a knowledge-based economy and the growth of social media, these students are at risk yet again of being left further behind. With the increased emphasis on the use of information communication technology (ICT) and online learning at third level education, these students are at risk of over-saturation.

This impact is not limited simply to a reduced capacity to perform academically: it can also impact on their socio-emotional domains, often leading to isolation and alienation from their "normal" peers. People living with SLDs tend to suffer from related stigma, both self- and externally-generated. Often carried from a young age and prior to entering third level education, this can affect the confidence and self-image of a student with an SLD, creating long-term repercussions that will affect them beyond of their academic lifespan by continuing into their professional careers where supports will be fewer again.

### 1.2 Context and Justification of Research

Both historically and at present, the majority of SLD research focuses on primary and second-level education populations to the exclusion of adult and third level education populations. While it is understandable and indeed eminently sensible that interventions be developed for as early an age as possible in

order to minimise the longitudinal impact made by an SLD, this is of little benefit to the pre-existing population who are often diagnosed later in life and as a result are beyond the capacity of support these interventions can provide. With the increased emphasis on digital media literacy (cf. Johnson et al., 2011), this population is instead pushed into a bracket in critical need of prioritisation so as to not see them left behind both within the academic setting and afterwards in the professional job market.

The standard learning environment is typically designed with normative populations in mind, with adaptation rather than inclusion traditionally occurring at a later date for minority/fringe communities such as students with SLDs (Meyer & Rose, 2005). In order for this population to receive a measure of balance, this trend needs to be reversed, with their needs and requirements placed at the nascent stage of system development rather than as an afterthought.

The issue of adaptation and inclusion in system and environmental development is a matter of import not simply due to any particular moral stance or agenda but by legal obligation: these students are legally entitled to the same opportunities as any normative individual by dint of the Equality Act (Office of the Attorney General, 2004) and the National Development Plan (European Social Fund, 2006). If this population is to meet the demands placed on them by an increasingly information-dense learning or work environment, then the dismantling of barriers to their success must be addressed (Williams et al., 2007).

While supports do exist at third level education, they are most commonly operated on an individual level between student and tutor. These tutors rarely, if ever, have an SLD themselves and lack as a result an inherent contextual understanding of the condition. While this is necessary in order to help the student academically, it creates a scenario where the tutor is an outsider to the SLD community and limits their ability to aid the student on a deeper socio-emotional level in the same fashion as a peer from the effective in-group would be capable of. The development of a peer support network would then be the logical continuation of this train of thought, acting to complement existing supports and build a greater degree of in-group agency and self-advocacy by allowing their personal experience to be put to active use and shared contextual support – human reciprocity (Williams et al., 2007) and 'the social component of learning' (Browne, 2003) at work.

The social element in this issue should not be underplayed or ignored. Indeed, it is critical to address the often overlooked socio-emotional domains of the population (Department of Education and Science, 2001) as both indicators and contributors to student performance, including but not limited to the self-esteem, emotional development and the relationships of the learner (Aspinwall & Taylor, 1992; Gerdes & Mallinckrodt, 1994). Per White (2002), the divide of SLDs and these domains may often occur due to the emphasis placed on the medical model of disability, which tends to emphasise the positivist approach to the cost of unobservable phenomena, over the social model which holds to constructivist beliefs, in particular the artificial nature of

disability. A key point of White's paper suggests both disciplines might benefit from considering the supposedly opposing contention. If the network is to follow a human-centred approach and take into account the necessity of the aforementioned socio-emotional domains, then the social model must not only be given credence, but made an active element of the framework and methodology. This is particularly relevant in regards to the fifth stage of Tuckman and Jensen's 5-stage theory of group formation (1977), 'adjourning'. Students enter third level education, pass through all the stages but often lack debriefing after completing their exams and before moving onto the next stage of their lives. By creating a peer-support network, the opportunity arises to both address this stage of their lives and also allow the student to be part of an in-group which can potentially carry forward afterwards.

## 2. RESEARCH QUESTION AND OBJECTIVES

### 2.1 The Research Objective

The primary objective of this research is to investigate the potential of developing peer-support networks, actionable education frameworks and independent learning strategies through information communications technology (ICT) for students with Specific Learning Difficulties (SLDs).

Broken down into its key components, the objective results in the following aims:

- To initiate and monitor self-sustaining peer-support networks through ICT for students with SLDs.

- To develop actionable education frameworks, adaptive learning strategies and reusable learning resources (RLR) for same.

- To subsequently provide the students opportunity to assemble scripts and frames for schemata that can be used outside of the network and education setting.

Further considerations which should be taken into account when addressing the above include the need to develop the framework in a cost-effective and easily replicable state, both for the ongoing research and for any party interested in using or adapting the work thereafter. Ideally, in addition to providing support for the SLD student population, the research should be geared wherever possible to promote and enhance student retention, resilience and performance.

In order to address the broad range of needs borne by the participants, the thematic domains of Integration, Communication and Imagination were identified, based on the considerations of the ability continuum of the SLD population and in particular autistic-spectrum disorders. These domains form the basis of the research framework, working research questions and hypotheses.

**RQ1.** To what extent can the research enable the integration of SLD students into normative populations?

*Hypothesis 1a:* The development of co-ordinated learning environments will enhance the performance, retention and resilience of students in third level education.

*Hypothesis 1b:* ICT can be used to safely address and develop the social and emotional domains of students with SLDs.

**RQ2.** How can ICT be adapted in order to promote a greater capacity for communication/interaction in the SLD population?

*Hypothesis 2a*: Peer support through social networks can act as a medium to develop communication and intra-personal skills.

*Hypothesis 2b:* Through the development of communication skills, academic performance and capacity for self-advocacy will be improved.

**RQ3.** To what extent can ICT and peer-support networks be utilised to promote applied imagination/sense-making in the SLD population?

*Hypothesis 3a:* ICT and peer-support networks can aid in the development of social imagination / understanding of cause and effect

*Hypothesis 3b:* This understanding then can be used to develop applied imagination and the capacity for problem-solving.

### 3. FRAMEWORK

Due to the wide range of SLDs and significant variance of symptoms therein, a Universal Design for Learning (UDL) approach should be adopted (Meyer & Rose, 2005). With the significant growth of ICT in recent years, advances in Assistive Technology (AT) have been significant. AT is 'any item, piece of equipment or product system that is used to improve functional capabilities of individuals with disabilities' (NCTE, 2011). Used in conjunction with UDL theory, these advances can enable and empower the SLD population to master the ICT necessary for the changing job market and economy.

The project will initially use a shared database/message board system to allow participants to interact with each other. An Instant Message (IM)/communication conference system will also be incorporated to allow online conversations in real time. The message board will be sub-divided into several sections in order to allow clear distinction of subject, such as Academic, General and Social. A section for technical support and feedback will also be provided. It is important to ensure that all conversations on the board are threaded so that participants can clearly see who is talking to whom and in regards to what subject. Particular attention will need to be

paid in regards to design and participants whose SLD is visually based (such as dyslexia).

For the sake of maintaining options for adaptation and adjustment as needs require over the course of the study, minimising costs and avoiding conflicting issues of copyright, software used will maintain Creative Commons or be under General Public Licence.

Given the range of disciplines the participants are likely to come from and so as not to conflict with lecture and curriculum-based information, the network will be used initially to promote and develop generic skills necessary for standard college work, such as referencing, formatting, writing skills and structure. Students will however be free to discuss their subjects and offer advice to each other in this regard. As student needs become more explicit and usage more frequent, the framework will shift to specialised, subject-specific curriculum design. Needs assessment can be performed both by using focus groups before constructing the system and by enquiry through the system periodically thereafter.

As a security measure, all systems will be gated so as to prevent parties outside of the study from interfering with the participants or generating erroneous data.

### 4. ETHICAL CONCERNS

The primary ethical concerns in regard to this research are the protection of the participants, their data and anonymity. Access to raw, personal or identifying data will be available to the primary investigator and supervisor only; any relevant party pre-authorised for access to confidential information regarding the participants, such as the disability officer, will also have access to this data on request to ensure transparency. Fully anonymised thematic and statistical data can be made available to other researchers and external examiners on request, but no contact details or identifying information will be shared or disseminated at any stage, with the exception of the authorised figures mentioned earlier.

Data collected will not be kept whole in one location, but will be separated – usable anonymous data in one external hard drive, personal or identifying data in another, the latter of which will at no time be connected to a network. These hard drives will be encrypted and password-locked. The passwords and access to said data will only be held by the primary investigators. All data collected will be anonymised for usage in the study. Each participant will be assigned a pseudonym should an instance arise which necessitates making reference to individual participants during the course of the study or in documentation outside of the raw data. No personal or identifying data will be kept off-site at any point of the study.

As it is intended to develop a peer-support system rather than an intervention, direct contact with the participants by the primary investigator will be minimal and mediated by the medium of the network. If for any reason the participant feels that they cannot discuss issues that arise through the network, they will be allowed to make an appointment with the

primary investigator to meet in person, but this should not be viewed as a first resort and where possible will have a third party present.

Ethical approval for the research was given by Waterford Institute of Technology (WIT) as the site of the case study in May 2011.

## 5. METHODOLOGY

### 5.1 Recruitment

Students will be made aware of the study and the opportunity to participate via materials such as posters and fliers which will be placed/distributed through the two campuses of the Institute. All actions by the primary researcher in this regard will adhere to WIT guidelines.

### 5.2 Selection Criteria

The participant age range is 18 years of age and up. There is no functional reason for an upper age range. All participants will be registered students of the institute who have an SLD which impacts upon their cognitive domain as identified and vetted by the disability office in the Student Life and Learning unit at WIT. This process is necessary avoid the collection of data that would be potentially inappropriate for the primary investigator to receive, hold or retain, such as psychologists reports or diagnoses of the SLD. It will also reduce any disclosure, security and data protection issues, and relieve issues regarding evidence of SLDs, since the disability office will already have this information and can confirm or deny the student's status without needing to go into further detail.

### 5.3 Exclusion Criteria

Students who are not vetted by the disability office in Student Life and Learning as having a SLD will need to be excluded from taking part, both as a measure of legal insulation for all parties involved and as a means of controlling for erroneous data prompted by students who do not have an SLD.

Students who are assigned to the primary investigator in his role as a Learner Support tutor for the disability office must also be excluded in order to not confound data / findings or risk exerting undue pressure on participants to join or continue with the study. Subject to agreement with the disability office, a student assigned to the primary investigator for learning support who wishes to participate in the study can request to be transferred to another learner support tutor where possible.

Students who deregister or defer their position in the institute will also have to be excluded from the system to avoid confounding data later.

### 5.4 Disclosure and Consent

Informed consent will be obtained from participants when they commence interaction with the study. Due to the nature of SLDs such as dyslexia and the potential for confusion from incorrectly reading the information, the primary investigator will read through the informed consent form with all participants to ensure they fully understand the purpose of the study, what is involved and what is expected of them, particularly in regards to negative behaviour such as bullying and online abuse. The participants will also be given time to ask any questions they may have. Once satisfied, they will then sign two copies: one for the investigator and one for their own records. In the event of a student younger than 18 years of age wishing to participate, parental consent will be sought. When signing the consent form, students will be informed that they can leave at any time and will be asked to sign an addendum to the consent form indicating this desire to leave. This is designed to act as a record of their consent, as an opportunity to debrief the student, giving closure to their participation and also to see how the network can be adapted or improved if possible.

Following confirmation of status by the disability office, the only factor students will need to then disclose to the primary investigator is what their SLD is in order to optimise the system to their needs and to provide context for the findings thereafter.

### 5.5 Methodology

Provisionally, the methodology that will be employed is to have the primary investigator act as a facilitator within the network, promoting use of the system and contextual support which will be phased out as interaction between the network users increases. This role will be scaled back to that of a moderator ensuring that there is no abuse of the system or the users, and to be on hand as unforeseen or undesirable situations arise. During this period, students will be encouraged to engage with the peer-support network rather than rely solely on hierarchical systems, transforming them into active stakeholders. In order to protect participants from abuse, two functions of the primary investigator which will not be reduced by any extent or at any point are the monitoring of anti-social behaviour and the provision and restriction of access to the network.

Performance metrics and learning analytics will be used to record and analyse student behaviour and interaction with and within the system: their usage, uptake and progress. Given the nature of the network as a de facto online community, cyber-ethnographical methodology and analysis would also be appropriate in tracking participant contribution and behaviour (Ward, 1999; Browne, 2003). Due to the acknowledgement of both the social and medical models, a mixed methodology approach is necessary: qualitative and quantitative data will be respectively sought, based on the data provided through the network and also through feedback from and debriefing of the participants over the course of the study. Inappropriate information provided by participants will immediately be referred to the appropriate authority and dealt

with accordingly. Any action taken will be jointly decided in conjunction with this authority and will adhere to WIT guidelines.

*5.6 Projected Time Line and Milestones*

The period of June to August 2011 will be used to source the network software that will be used to facilitate the peer-support network. Software will be selected based on ease of use and adaptation to the needs of the target populations. Flexible aesthetic design tools would also be preferable in order to cater to these requirements, as would software that can incorporate the use of pre-existing AT.

It is intended to have the software for the network finalised, tested and debugged for the end of August 2011 so that it can by pilot tested by late 2011, subject to recruitment. The most efficient way to track overall student progress would be to map the data collection phase as closely as possible on the academic year. The initial recruitment phase can in effect begin on day one of Semester 1, with the time until launch being used to brief potential participants, acquire informed consent and to gauge additional features that may be of benefit to the network.

The pilot test phase would operate from the Semester 1 mid-term to the end of Semester 1 and related exams. Subject to the level of modification and adjustment required, the full service may be rolled out as early as the start of Semester 2, ideally to coincide with the release of the Christmas exam results. This initial field research is anticipated to conclude with the end of the semester 2 exams, after which participants will be invited to debrief. This cessation can be delayed if students indicate that it may help in preparation for repeat exams.

Following this, the analysis of findings will begin and consideration will be given as to whether further primary research is required.

## 6. CONCLUSIONS

The development of a peer support network through ICT for students with SLDs would be of no small benefit in the current economic climate. They are, at the heart of it, a capable and often untapped human resource that can contribute academically and professionally given the appropriate support. While emphasis was placed above on the overt legal entitlement of the population, there is also a moral consideration involved in the establishment of equality. The application of this research in a third level education setting also goes some way to redress the inadvertent imbalance created by parties who are diagnosed with having an SLD later in life. If indeed the support network only goes so far as to give students with SLDs the opportunity to openly discuss their issues with peers and in doing so lessens the emotional weight and impact which their condition may cause, it will have proved a valuable social contribution.

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**Appendix H**

**SWIIS 2012 Conference Paper based on this study**

# A Limited Engagement: A Case Study in Using Contextualised Online Learning Environments to Engage With Marginalised Communities

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**Abstract:** Online support systems offer opportunities to support the cultivation of international stability by engaging with and enabling marginalised communities at local, national and international levels. In order to unlock this potential, it is imperative to understand the barriers and socio-emotional factors which impact on the engagement of these communities with the aforementioned systems. This paper presents preliminary findings on the barriers and difficulties in the case of one such marginalised community: students with specific learning difficulties. During research work performed with a section of this population, a low level of cohort participation generated the need to reassess the structure of the research and the motivations of the target population. Subsequently, an additional line of inquiry is necessary to address the motivational factors of the cohort to evaluate if the low participation is due to relatively benign issues such as a lack of interest in or low awareness of the project, or of a more serious nature, such as negative affectivity or learned helplessness.

*Keywords:* Education, educational aids, human-centered design, knowledge transfer, learning systems.

## 1. INTRODUCTION

The development of global-scale communication technologies has had a colossal impact on education and knowledge development (Bonastre et al., 2005), empowering significant proportions of the international community to interact with and share information, knowledge and media in a near instantaneous fashion at minimal cost. In the midst of this progress however, it is important to consider the risk of further divides emerging in social, experiential, and indeed opportunistic terms of the digital context for minority or marginalised populations. It is critical to engage with these communities, both on practical grounds - as cohorts which can contribute to the field - and ethical grounds - that they have the right and resultantly should have the opportunity to participate.

Stability on an international level is more likely to hold fast if the abstract structure it is built on remains sound, in pragmatic terms (as internal instability would potentially jeopardise efforts towards external stability) and philosophical (Carew et al., 2011). In order to follow this agenda, it is important to understand the barriers, biases, and additional factors which impact on engaging with these groups, both internal and external to the cohort: self-view, socio-emotional domains, limitations, and so on. This paper will look at the barriers and difficulties found in engaging with one such marginalised group: students with specific learning difficulties (SLDs).

The objectives of this paper then are as follows:

**O1.** To consider the case of students with SLDs as a marginalised community who can be activated through Information Communication Technology (ICT) systems.

**O2.** To present the preliminary findings of a prototype online support system to support this population, with a particular emphasis on the difficulties and barriers experienced in this engagement by all parties, and

**O3.** To consider the implications of the preliminary findings for future research.

## 2. THE SLD POPULATION

*2.1 Context and justification of research*

An SLD, often referred to as a Learning Disability, Difficulty, or Disorder, is 'a diverse group of conditions that cause significant difficulties in perceiving, processing and/or producing auditory, visual and/or spatial information.' (TCD, 2010) For the sake of clarity, inclusion, and to what extent it allows as a measure of empowerment, SLD in this paper and its on-going research will refer to the more affirmative blanket term of Specific Learning *Difficulty*. A key difference of SLDs to an intellectual or general learning difficulty, where a student's intelligence is affected, is that someone who has an SLD is of average or higher intelligence: their condition limits but does not necessarily prevent them outright from performing to their full capacity. As a result, a student with an SLD has the additional workload of their impairment to overcome in order to perform at a level similar to that of their unimpaired 'normative' peers. The key

element to this is that, while impaired, it is a level of achievement that they are capable of.

In spite of their needs being apparent from the outset, learning environments are typically adapted rather than designer for the SLD population (Meyer & Rose, 2005). Furthermore, the majority of SLD research and interventions focuses on primary and second-level education populations to the exclusion of adult and third level education populations and in spite of the increased emphasis on the development of a knowledge-based economy and digital media literacy (Johnson et al., 2011). This comparatively small scale of support comes into contention not just to the SLD population's entitlements per equality legislation (Office of the Attorney General, 2004) and efforts by the National Development Plan and the European Social Fund (2006), it also has bearing on the often-overlooked socio-emotional domains (Department of Education and Science, 2001), including but not limited to the self-esteem, emotional development, and the relationships of the learner.

In order to prioritise this population, their needs and requirements should be placed at the nascent stage of system development rather than as a secondary or tertiary consideration, hence the stated objective. What systems are generally developed in such a fashion is assistive technology, such as speech recognition software, like Dragon, or text-to-speech software like Read & Write Gold. These options however adapt pre-existing software as opposed being specific holistic alternatives in and of themselves, and do not address issues beyond the technical. While academic supports do exist at third level education, they are most commonly operated on an individual level between student and tutor rather than on or as a network. Additionally, these tutors rarely have an SLD themselves and as a result they lack a personal experiential context. In contrast to this, the development of a peer-support network enables participants with direct, personal experience to not only develop a greater agency for themselves but also to better adapt the information for their peers. Key functions indicated by the literature include the promotion of human reciprocity, the dismantling of barriers (Williams et al., 2007) and 'the social component of learning' (Browne, 2003) potentially leading to the improved retention, resilience and performance of the population.

## 3. THE ONLINE SUPPORT SYSTEM

### 3.1 Framework

In order to account for the wide range of SLDs and significant variance of symptoms therein, a Universal Design for Learning (UDL) approach should be adopted (Meyer & Rose, 2005). In order to address the socio-emotional domains, the social model of SLDs needs to be incorporated in addition to the medical, which tends to focus on the biological factors (White, 2002).

The initial design of the project is a shared database/message board system to allow participants to interact with each other. All systems were gated so as to prevent parties outside of the study from interfering with the participants or generating erroneous data. The stated initial operation of the network was to promote generic skills necessary for college work (such as referencing, formatting, writing skills). As student needs became more explicit and usage more frequent, the framework would shift to specialised, subject-specific curriculum design. Network needs assessment could be performed by using focus groups, feedback forms, and by enquiry through the system.

With the initial goal to create a contextualised online environment, the project would allow students with SLDs not only to interact, but to engage with each other. Early success would be measured by students interacting with the site for academic support and, eventually, each other. The knock-on effect of this would be lead to their acting as an emergent peer-support group which could begin to address the socio-emotional issues raised by their individual complications. The absolute ideal outcome would be their interactions rendering the primary investigator's position as the de facto moderator redundant when they transitioned into the role of active shareholders who no longer required such a presence on the site.

### 3.2 Methodology

A single third level education institute was selected for the pilot phase of the research. In the recruitment stage, advertising materials such as posters and fliers were placed around high usage areas on-campus to generate student awareness. Direct contact was inadvisable, at the risk of skewing data, and would be in violation of ethical standards and approval. Acquiring such data from any institute agency would also be impossible under national data protection legislation (Data Protection Commissioner, 1988, 2003). On meeting participants following their voluntary first contact, the process, obligations and requirements would be discussed, in addition to an open invitation to request and criticise anything they want, need, and feel without risk or fear of punitive reprisal. They are, in effect, the client.

In the network/website itself, the primary investigator would act as a facilitator, promoting use of the system and contextual support which would be phased out as interaction between the network users increases. This role would be scaled back to that of a moderator ensuring that there is no abuse of the system or the users, and to be on hand as unforeseen or undesirable situations arise. During this period, students would be encouraged to engage with the peer-support network rather than rely solely on hierarchical systems, transforming them into active stakeholders. In order to better involve participant interaction, an open invitation to critique the network was offered, both at the initial contact with participants and on the site itself. This in principle would allow participants a greater degree of agency and involvement with the project, and in turn support their transition to stakeholders.

Performance metrics and learning analytics would be used to record and analyse student behaviour and interaction with and within the system: their usage, uptake and progress.

Cyber-ethnographical methods are also useful in this regard (Ward, 1999; Browne, 2003). Due to the acknowledgement of both the social and medical models, a mixed methodology approach is necessary: qualitative and quantitative data were sought, based on the data provided through the network and also through feedback from and debriefing of the participants over the course of the study.

The pilot phase of the project was run from November 2011 to January 2012, providing three months of data. Participants could use the test site both as a means of academic support and to indicate any changes they would feel appropriate for their cohort's use. The full roll-out has since been initiated, operating until May 2012: this period is the prime data-gathering phase. An optional phase of data collection has been left open to run from June to September 2012, but this data would be considered ancillary as opposed to essential.

### 3.3 Unexpected difficulties

The poster-led advertising campaign ran into an administration issue as institute offices offered contradictory information as to what could and could not be done with recruitment advertising on-campus. In order to get around this, and in an attempt to reduce the destruction of resources, school offices were contacted directly to acquire permission to display posters and information. The erratic advertising presence however may go some way to explaining in part the low initial participation levels.

## 4. PRELIMINARY FINDINGS

The initial test phase provided interesting data, albeit not necessarily outcomes which had been anticipated. The chief concern as the test phase came to a close was the low level of participation, with a smaller than expected test population being acquired. In order to begin addressing the potential issues and pitfalls at this stage of the project, a one-page feedback questionnaire was sent to the active participants. This questionnaire consisted of two sections: the first was a Likert scale asking students to rate four aspects of the website across eight headings for purposes of rigour; the second was a self-report section directly asking students what they liked and disliked about the site, and what they would like to see added or changed.

In order to increase the likelihood of receiving feedback, all participants who returned feedback would be placed into a draw for what was initially a €10 gift voucher, later increased to €20 in order to align with the incentive scheme.

### 4.1 Early findings

In receiving feedback, some student issues became immediately obvious. While feedback on the site structure and layout was generally positive, there was an issue of confusion raised due to what was described as 'too many options' for posting. Particular sections of the forum were cited as being confusing in regards to their purpose and function. Participants also noted that they would prefer information they wanted to be pre-prepared and on the site in advance so that they could look for it rather than ask.

One issue came to the fore almost by accident. In order to allow for busy schedules, participants were given three weeks to return the feedback forms. As stated, a €10 gift voucher was offered, and then increased in value a week later to see if students would respond in kind to the higher incentive. On the day before the allotted deadline however, no feedback had been received. As part of the final push, a text message and email reminder was sent, both to remind students to return the forms and the potential of effectively winning €20 for doing so. It wasn't until that evening that a student responded that they could not open the file due to having an older version of Microsoft Office. Apologies, a compatible version of the feedback form, and an extension of four days were sent to all participants as a precaution. Following this, all but one participant responded within 24 hours with this revised document.

While on one level this may seem simply to be an issue of technical compatibility, it does seem in fact to go deeper: if that lone student had not contacted the primary researcher, would anyone have submitted feedback? Given the incentive that was on offer and oft-stated mantra that they could criticise and discuss the project with impunity, why did no one raise the issue sooner? Considering this in tandem with the participants statements that they would prefer to not to make themselves visible in asking for information, and if we were to look at an even broader picture the low level of participants coming forward to take part, indicates deeper issues at play.

### 4.2 Emergent themes

**Theme 1: Passivity.** Participants were slow to use the system and logged on to it minimally in the test phase. Even in the early stage of the current phase, there is little activity or contact, outside of some cursory questions which even then do not exceed asking a question.

**Theme 2: Isolation.** Participant preference for finding the information pre-prepared and with a minimisation of interaction indicates a preference to maintain low visibility, if not remaining functionally anonymous.

**Theme 3: Holism.** An interesting preference indicated in feedback relates to the integration of the project into what students already use. Several respondents indicated the redundancy of the Social section of the forum in light of (and due to their personal preference for) Facebook. While use of Facebook had been initially avoided due to the public nature of the Pages system, its requested addition to the project is both noted and followed upon (albeit with caveats to protect student confidentiality). It remains to be seen if other social media sites will be requested, although Twitter has also been engaged in anticipation of this purpose.

**Theme 4: Potential.** One factor that came up in all feedback was that of potential, both in the positive and negative connotations of the concept. Those who subscribed to the

former viewpoint (which is also the majority view) see a high level of potential use for the project, primarily as an all-in-one resource for the information they need or expect to need.

**Theme 5: Stigma.** During the initial disclosure of their respective SLDs, some participants stated a concern in regards to any required level of disclosure that would be required of them on the network, and of any potential for the identifying information being disseminated to unseen parties which could have long term career implications (such as future employers). While assurances at the initial stages at least placated the issue at least temporarily, the issue may bear an underlying effect that should be explored.

*4.3 Emergent issues*

**Issue 1:** The reactivity effect may bear some weight on this issue (Heppner et al., 2008). The presence of a de facto outsider moderating communication may deter participants from potentially exposing their vulnerabilities. Similarly, peer judgement, or at least the perception of it, may also be pushing participants to avoid standing out.

**Issue 2:** Low population awareness remains a concern. While difficult to verify, it should at least be considered as a problem to be dealt with going forward.

**Issue 3:** Technological limitations are at current standing twofold. The first and most definite is that of hardware/software. While the project was designed with the assumption of lower specification hardware and software, the issue with the feedback forms at least presents an issue to be considered. All participants have at least logged onto the network without complaint, so for the moment the core mechanics are not an issue. Experiential issues may also be present, and will require some investigation.

**Issue 4:** Low cohort motivation vs. Passivity: If the former is the issue, then the site may need to be further adjusted, and probing is required to refine it to the needs of the cohort as they are disclosed; the latter however is a more difficult matter to attend to.

**Issue 5:** Activation vs Negative affectivity. In many respects, the network was designed to operate in a fashion similar to employment assistance programs (Graverson and van Ours, 2008), promoting participants to engage with and take charge of their progress. The issue of the efficacy such programs pose has however been raised (Fougère et al., 2009): can such systems go against the intention and impact negatively on the potential participants, who in many cases have gone through similar projects in the past? Engaging in this line of inquiry may provide some insight into participant motivations and issues.

**Issue 6:** Learned helplessness is in effect the worst case scenario due to the long term implications it would hold for the participants. While it will be investigated, it is hoped that any indicators or evidence found will be outliers or circumstantial.

*4.4 Patterns to investigate*

Currently, the main behaviour of participants is in using the site to ask questions directly related to what they are doing at the time (such as referencing or writing their literature review). It will be interesting to see if participants break out of this mode to ask less generalised, more targeted questions, or indeed utilise other sections such as the social functions and technical support. Opening prompts have been posted on the site to generate discussion in that vein, but even a lack of response to these will yield findings.

Response time and reactions will also be useful to track: the only example of an effective immediate reaction was in relation to the announcement of the incentives scheme, which saw a flurry of logins occur within a six hour period. In all other instances, trend interactions are spread out over several days with little consistency as regards to timestamp of access.

Length of and detail in content posted will also bear examination: participants currently post short posts with only a few lines and bare minimum of content or line of inquiry, with probing questions by the primary researcher necessary to ascertain a more specific understanding of their issue or need. Any notable and sustained increase in length would be a positive step for site and peer interaction.

Tracking student opinions will also have bearing on the overall success of the project. To this end, feedback will be sought periodically to further refine the concept and open up avenues of investigation, both for the remainder of this study and subsequent research in this vein.

*4.5 Addressing the immediate concerns*

Student feedback was immediately placed into motion: the information provided, both in content and the form of the website and forums, was rewritten to make absolutely clear the purpose and function of the site, the site sections, the research, and any additional information.

In an effort to increase in-system participation, an incentive scheme was devised. In order to be entered into a monthly draw for the gift voucher of their choice, students would simply have to make one post a week each week of the calendar month on anything they liked, be it academic, social, or even simply a post with little or no content at all. This would at the very least allow suppositions to be made, if not outright indicators of, their motivations, engagement, and passivity.

In order to try and address the issue of low awareness, the advertising was adjusted in two ways. First, the poster was redesigned to allow additional information. The tearaway information was removed and replaced with a QR code, in turn allowing for better use of space and more information on the page. The placement of posters is also now far more comprehensive.

The intent to reduce the primary researcher's role as moderator has been placed on hold for the foreseeable future. As it stands, it remains unlikely that the participant

population will reach a point of usage in this study that would enable the reduction without the risk of the students abandoning site participation absolutely.

Furthermore, in order to test if the student population currently being targeted is an outlier or indicator of the broader population, contact has been made with other third level institutions to become involved with the project. With some having already made tacit agreements to allow their populations to participate, their behaviour in either align with or acting in contrast to the current population will provide ample information.

## 5. PASSIVITY & MOTIVATION

### 5.1 The Spectrum of Passivity

The implication of passivity requires not just a shift in methodology, but in theoretical consideration as well. As participant motivation becomes a factor under review, it is important to consider the source and implications of passivity holds in engaging with a marginalised community.

Hall (2004) discusses the impact of hidden 'social geographies' faced by people with learning difficulties, both in practical terms, such as fewer opportunities for employment, housing, education, and 'the embedded sense of mental difference', due to 'discrimination, abjection, abuse, poorer health and a lack of control over the key decisions that affect their lives' The issue is in part at least related to the social stratification of sorts discussed by Jenkins (1991) where he points to the exclusion and low political visibility borne by people with disabilities: by the nature and function of their impairment, they are shifted into a separate social class and economy to that of the majority and 'patterned inequality.' With even the subconscious perception of this as the field of interaction, passivity in what mainstream engagement is provided is almost inevitable since any connection with it is lessened. Snowden (2004) cites the 'banking system of education' as a source of apathy and disempowerment: lecturers act as the bankers who provide the capital (in this case knowledge) to students, who in turn transact this knowledge for assessment without fostering 'their critical engagement or intellectual development.' Rather than being the engines driving their education, they are a passenger getting a lift. Instead of being active lifelong learning agents, they are passive repeaters whose body of knowledge at any given point is shaped by modularisation.

Learned Helplessness meanwhile exists as an extreme endpoint of the passive mode. Per Seligman et al. (1971, 1975), it occurs when a person has learned from prior negative experience (typically from uncontrollable events) to act or behave in a non-responsive fashion even when it is within their power to affect the situation. This situation develops three deficits within the affected of the negative experience: motivational, cognitive, and emotional (Abramson et al., 1978). These deficits act as results and reinforcements of the contemporaneous and subsequent uncontrollable situations through causal attribution which will determine the parameters of helplessness deficits

generality and chronicity, in turn affecting the subject's self-esteem (ibid).

In the instance of the on-going research project, it is important to determine the specificity of the internal non-reaction. Is the negative affectivity in relation to the online environment or academic environments in general? Is it specific experiential factors at work – in this instance, ICT – or general experience from 15+ years in the education system? There is also the essential consideration of whether this is a localised or representative issue: in testing the system with other locations, is a similar (non-)response likely to occur, or is it a locational effect? Would it for example be rooted in the higher rural catchment of the initial testing ground, and an observable difference would be immediate from an urban-majority populace?

### 5.2 Engaging with passivity

How then do you best engage with a passive population? Avis (2000) the contrast between the social and business models of education, advocating a dialogic process over managerial. He indicts the latter as stifling creative and critical engagement, but offers little in terms of addressing the absence of interaction. Snowden (2004) iterates the use of a (preferably goal-based) learning community, but the paper in effect assumes that the group is already gathered, rather than being assembled over time. Even with the group assembled, she notes the internal resistance of the group to the stated goals. Accepting this as an inevitability is however practical, with the greater emphasis being placed on avoiding a 'One-size-fits-all' model. While her paper was primarily concerned with the integration of ethno-cultural diversity, the socio-cultural factors and condition-variance of multiple SLDs brought together to form an education community would share complexity of operation. Firth et al. (2008) emphasise the need for at least perceived personal control over external situations to empower students with SLDs. The key drawback of their intervention is that it should be initiated earlier rather than later so as to minimise the experience of failure: the more prolonged the delay in developing these coping strategies, the harder it will be to undo the effects. For Abramson et al. (1978) however, the issue and proposed solution is much more complex: based around the attributional function of learned helplessness, they effectively sue for positive reinforcement through controlled expectations, a more nuanced approach to probability of outcomes, and a more dynamic association of excessive failure with external forces and unrealistic success with more achievable internal response. While a gross over-simplification of what is a complex psychological process, this remains a solution which can only be addressed by the participant, rather than enforced by the researcher.

## 6. CONCLUSIONS

While there is little debate in the merit of people with SLDs as a marginalised community, the implications of the barriers to engagement present cause for concern. Due to their prior experiences, this population is mindful of protecting themselves and at the same time are placed in a position of

vulnerability. Carew et al. (2011) noted the need for Existentialist empowerment and the promotion of Humanist values in systems development in order to foster international stability, and how this often conflicted with dominant Technocentrist and Industriofatalist thinking. Marginalised communities must therefore be empowered and emancipated from debilitating and fatalist tendencies, such as learned helplessness and passivity, as seen in this paper, to further their own values and needs. Nevertheless, we have to be mindful that there is an innate arrogance in trying to emancipate "others" (Kincheloe and McLaren, 2000). Technology should be useful, elegant and desirable – people should want to use it rather than being compelled to do so (Sharples, et al., 2002). Contextual online learning environments – or other support systems – should therefore seek to provide marginalised communities everywhere with the accessible means to, wherever possible, emancipate themselves. Systems engagement, however well-meant, cannot be forced without the risk of exacerbating the attributional factors which lead to the extant passivity and disenfranchisement. Instead, an open and patient user-led dialogic process which invites participant feedback is necessary, preferably with a significant time frame apportioned to take to the aforementioned hesitancy and vulnerability into account.

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**Appendix I**

**List of alternate names for online learning environment**

As stated in section 4.3.4, a number of names were gone through in the development of Student Jam as a concept. The following are a list of names that came to varying degrees of closeness to use. Some, such as the .it domains, were exceptionally tempting due to the mnemonic advantage they implied. Some were rejected as the meaning felt off (BeMyHead.com, for example), felt as though they were sending the wrong message (WorkFight.com) or were just too silly and meaningless (WorkBongo.com).

In any case, please feel free to enjoy some of the Might-Have-Beens!

| | | |
|---|---|---|
| AllWeAsk.com | BeMyHead.com | Askforthe.info |
| SeekThe.info | GetWhat.info | NeedToKnow.it |
| AllEdCons.com | DontStress.it | WantToKnow.it |
| LikeWhat.info | UseYourHeads.com | TheWayOf.it |
| Brainshare.me/.it/.us/tv | LearnOf.it | LearnMob.org/.net/.eu |
| Braingang.org/.net | AskMob.org/.net | ThinkMob.org/.net |
| Learnring.com | Brainring.org/.net | ShareMob.oirg/.net |
| WeDoMob.com | AsWeNeed.it | ThinkCrush.com |
| CollegeJam.org | SmartJam.org | AttackTheWork.com |
| BringJam.net | WorkFight.com | BrainStable.com |

| | | |
|---|---|---|
| BrainBash.net/.org | WorkBongo.com | WorkBusting.com |
| WorkDMZ.com | CollegeDMZ.com | WITnet.com |
| SomeDo.it | KnowHow.com | CollegePlus.com |
| GoFurther.com | NetResult.com | TakeOff.com |
| PluggedIn.com | YouLearn.it | HowToPass.com |
| Launchpad.com | LeaeningPlus.com | YouLearn.it |

**Appendix J**

**A selection of the locations used for project advertisement**