The url for the computer artefact is:

http://blake.cs.tcd.ie/maginn

Username: 1st

Password: 1ooo

When opening screen comes up – click on Relationship and Sexuality

Education

Towards Supporting Communication In Relationship And Sexuality

Education Through A VLE

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in partial fulfilment of the requirements for the degree of

Master of Science in Technology and Learning

2009

Declaration

I declare that the work described in this dissertation is, except where otherwise stated, entirely my own work and has not been submitted as an exercise for a degree at this or any other university.

Signed: _____

Marion McGinn, BA Hons (NUIM)

2009

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2009

Abstract

The task for teachers of Sexuality and Relationship Education (RSE) is to provide young people with the knowledge and skills to make informed and responsible decisions about sexual behaviour in a safe environment where sexuality issues are addressed with respect and openness. Such education is crucial to help prevent unplanned teenage pregnancies, sexually transmitted diseases, sexual abuse and social discrimination experienced by non-heterosexual groups. However, the findings from several international (World Health Organisation, 2006) (WHO) and national research projects (Morgan, 2000; Maycock & Byrne, 2004; Hyde & Howlett, 2004) has highlighted how human sexuality is a difficult issue for educators to communicate with young people about in a traditional class setting. The growing tendency for young adolescents to communicate in online social settings such as discussion boards, chat rooms and social networking sites offers new opportunities where technology has the potential to be successfully employed in this area. Accordingly, in pursuit of an appropriate and effective pedagogical mode of delivery, a virtual learning environment (VLE) is presented as a possible example of a resource that may address some of the shortcoming of traditional RSE.

A case study was conducted with 3 teachers and 28 students of a co-educational post-primary Dublin school over a period of four weeks. A comprehensive analysis of data from students and teachers surveys, data from the VLE, discussion forums, and interviews provided encouraging results. The findings suggest that a VLE can be exploited as an effective communication support for the teaching and learning of RSE and has a number of advantages over the traditional face-to-face method

The pedagogical foundation of this study is guided by practical procedures based on Computer Mediated Communication (CMC) and the social cultural model which places emphasis on the development of young people in the context of social interaction and discourse. From the CMC view the focus is on how technology can enhance student interaction and the emphasis on the social and communicative nature of development is

guided by Vygotsky's (1978) view that progress does not take place on its own but begins when students are together to contribute to concepts, ideas, facts, skills, and attitudes. This in turn reinforces the social dimension of the education.

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Abbreviations:

AIDS	Acquired Immunodeficiency Syndrome
CMC	Computer Mediated Communication
HIV	Human Immunodeficiency Virus
ICT	Information Communications Technology
NCCA	National Council for Curriculum and Assessment
RSE	Relationship and Sexuality Education
SPHE	Social, Personal and Health Education
STIs	Sexually Transmitted Infections
VLE	Virtual Learning Environment
WHO	World Health Organisation

1. Introduction

With the global rise of HIV/AIDS, sexually transmitted infections (STIs) and unplanned teenage pregnancies, targeting adolescents has emerged as a significant focus of sexual health education for young people. The WHO states as its goal that all young people have the right to comprehensive sexual and reproductive health information education and services. However, a growing body of evidence suggests that, as a nation, we have been falling far short of this objective (Morgan, 2000; Maycock & Byrne, 2004; Hyde & Howlett, 2004; National Council for Curriculum and Assessment, 2007) (NCCA). Some of the barriers to adolescent sexual health education are believed to include a high level of discomfort with addressing sensitive topics (Lester & Allan, 2006) and a lack of communication associated with inhibition experienced by both teachers and students (Measor et al; 2000; Hyde & Howlett, 2004).

Studies of technology and teen sexual health have attracted increasing interest in recent years. The potential of online delivery can be found in the literature. The Internet is beneficial because of its potential to erase communication barriers caused by inhibition and social anxiety and the relative anonymity in seeking information and support online (Kanuga & Rosenfeld, 2004; Hillier et al; 2001). However, the ease of finding sexual health information on the web has raised several issues of concern. Problems include inaccurate or irrelevant information, lack of interactivity and potential harm due to the ease of adolescents to stumble across sites with nefarious intention, while searching for answers to questions about sexual health (Kanuga & Rosenfeld, 2004). As a potential solution to these problems, it was considered important to develop and implement a school based website for RSE moderated by qualified counselors and to evaluate its effectiveness in overcoming barriers of communication presented by traditional classroom teaching.

1.1 The Purpose Statement

An exploration of whether a VLE in Relationship and Sexuality Education can contribute towards overcoming (traditional) face -to-face communication barriers.

For the purpose of this study the following sub question were asked:

Sub Questions:

- What elements of the VLE help to support communication in a Relationship and Sexuality class?
- Do students see a value in using a VLE as a supplemental communicative tool?
- Do teachers see a value in using a VLE as a supplemental communicative tool?

1.2 VLE

The VLE Moodle platform was chosen for this project as it is an open source e-learning platform available under General Public License. It is a course management system that allows the flexible management of content, students and teachers and offers a variety of resources and activities. Its modular design makes it easy to create new courses, adding content that will engage learners and it is designed to support social constructivism pedagogy (Rice & Markey, 2008). Elements of the VLE which are particularly relevant to this study include a variety of resources available that helps facilitate interaction and engagement such as discussion boards, chats rooms, questionnaires, tracking tools, wikis, blogs, chats, quizzes, resources, and surveys.

1.3 The Present Study

In this study, the experiences of 3 RSE teachers and 28 students (including a pilot group of 6) of a co-educational Dublin post-primary school were examined to explore their perceptions of using a virtual learning environment to communicate in a RSE class. The study was conducted over a period of four weeks. A multiple perspectives approach to the research was taken which involved studying the views of both teachers of RSE and young people themselves. The researcher wished to engage with these different

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perspectives in an attempt to develop ways of promoting good practice with regard to the teaching and learning of RSE.

1.4 Thesis Roadmap

This research is organised as follows. In the next chapter of this thesis a review of the relevant literature is undertaken. This is followed by a description of the design implementation, based on the literature. The methodology chapter will focus on how the study was implemented, together with the development of frameworks for evaluating the data from the learning experience. In the final chapter the researcher draws some conclusions about the research process, specifically in relation to the literature review.

The research concludes by discussing some of the factors that influenced the use of an on-line environment for teachers and students, limitations are acknowledged and recommendations are made for future research.

2. Literature Review

2.1 Introduction

In recent years RSE in schools has become internationally important as it is recognised that such education is crucial because of evidence of the global rise of HIV/AIDS, STIs and unplanned teenage pregnancy (WHO, 2006). Nevertheless, many published reports have indicated barriers to providing comprehensive sexuality education remains (Buston & Hart, 2001; Hyde & Howlettt, 2004; Smyth et al; 2006; Selwyn & Powell, 2007). These obstacles include a high level of discomfort with addressing sensitive topics (Lester & Allan, 2006) and a lack of communication associated with inhibition experienced by both teachers and students (Measor et al; 2000; Hyde & Howlett, 2004).

Given that the digital revolution currently reaches millions of young people every day and the number of those being connected for the first time is growing (Department of Child and Adolescent Health and Development, 2004), an investment in investigating how we as educators can harness this situation to reach young people would make sense in terms of the dividends it may provide. In the present study, the role of a VLE is presented as a possible example of a resource that may address some of the shortcomings of traditional school-based sex education.

2.2 International Sex Education

In 2006, a report on 26 European countries commissioned by the WHO and the International Planned Parenthood Federation (IPPF) was aimed at developing strategies to support comprehensive sex education and develop better policies and practices among EU member states. The result presents a mixed picture. In countries such as the Netherlands and Denmark, sexuality education is widely accepted and supported, while in other countries such as Italy, Spain and Bulgaria where the subject is not mandatory, there is still strong opposition particularly from religious influences. School-based sexual

health education programmes are currently been delivered by a range of personnel including teachers, nurses, social, personal and health education (SPHE) coordinators and religious staff and the content is mainly dependent upon individual teachers and schools. While a wide variety of teaching methods is in evidence, a didactic approach to sexuality education remains common, despite pupils' preference for more interactive methods (Macdowall et al; 2006).

2.3 Problems with Implementation of RSE

According to the report mentioned above, problems with the implementation of sexuality education are remarkably similar across most countries.   The review pointed to a number of obstacles to implementing sexual health programmes for adolescents, including financial, cultural and religious barriers, as well as opposition from school administrators, teachers and parents.   At the teacher/student level, discomfort with teaching sensitive sexuality topics with areas such as homosexuality and sexual assault being almost universally ignored, teachers embarrassment about and emotional demands of teaching the subject, lack of discussion with pupils regarding the content of sexual education and difficulties for young people to access answers to difficult or personal questions.   Given that adolescents currently make up about one fifth of the world's population (WHO, 2006) efforts to educate the adolescent population on sexual matters requires development of new and innovative ways to reach young people with sexual health education and services.

2.4 Teachers and Students' Perspectives on RSE

Other studies have focused on more specific research into the views of teachers and students of RSE. For example, in a study of 58 UK teachers, it was found that compared to difficulties that may be commonly experienced in the teaching of all subjects, teachers talked about the teaching of sex education per se as being the most difficult (Buston et al; 2001).   More current literature identified the key factors that caused problems with teachers of RSE were lack of resources and materials and the sensitive nature of

discussing sex and sexuality in the classroom (Alldred et al; 2003). In addition, some researchers have argued that because some teachers were uncomfortable delivering sex education this resulted in textbook teaching and reluctance to answer questions or enter into discussion (Lester & Allan, 2006).

From the students' perspective, research by (Ackard & Neumark-Sztainer, 2001) found that adolescents were uncomfortable discussing private health issues, such as sexuality, contraception, menstruation and pregnancy with others. These findings were reflected in a later study that investigated the sexual attitudes and lifestyles of young people in Northern Ireland and found that although about 58% of all respondents felt they would like to receive more sexual education in school, significantly only 5 percent of the young people found it easy to talk to their teachers about sexual matters (Schubotz et al; 2003). Others commented that the main problem for pupils was when they felt constrained by feelings of embarrassment from expressing their needs, or ask for information which they think teachers will be too embarrassed to provide (Measor et al; 2000; Hyde & Howlett, 2004).

Since 2003 all Post Primary schools are required to implement an RSE program as an integral component of SPHE at junior cycle (12-15 years) and as a program in senior cycle (15-18 years). Yet, a report by the NCCA (2007) found that 11% of schools reported that they do not teach RSE at all in 1st or 2nd year. This increased to 20% in 3rd year, 30% in the 1st year of the Leaving Certificate Examination (the terminal examination of post-primary education taken in final year) and 33% by the final year of that cycle. Given that a study of sexual behaviour among Irish adolescents by (Maycock & Byrne, 2004) suggests that up to one-third of sixteen year old school-goers may be sexually active, it is essential that we ensure all adolescents get informed sex education.

2.5 Gendered Learning

The relevance of gender in the delivery of sex education has also received great attention.

Knowledge about good sexual health requires the confidence and ability to ask questions. Yet, some research has found that boys cannot admit in front of others the need for knowledge about sex (Wight & Abraham, 2000; Postmes & Spears, 2002). According to (Maycock & Byrne, 2004) young men were reluctant to talk about their emotions and some could not communicate in any depth about their relationships in formal based RSE classes. It is suggested by (Richards & Tangney, 2008) that ICT may be a welcome alternative for males to access health education and other services.

Several studies have pointed to the concerns raised by girls that concentration on female issues was too factual and biological, bearing little or no relationship to real-life choices, pressures and contexts, and fail to deal with the personal and social consequences (Measor et al; 2000; Sierpe, 2000; Richardson & French, 2000; Miller & Durndell; Thomson & Scott, 1991). As observed by (Campbell & Aggleton, 1999), to be effective sexuality education must meet the needs and interests of young people as conceptualized by them. It has been suggested that teachers' hide that which they could not speak about behind the technical and neutral language of biological science (Higgins et al; 2008).

Gay youth are invisible in the guidelines and resource aids for relationship and sexuality education in Ireland (Maycock & Byrne, 2004). The authors argue that because the landscape of gender relations is a confusing and frequently painful territory for young people, this silence may leave them feeling isolated and alone. Research suggests that CMCs can be especially beneficial for lesbian, gay and bisexual youth with low self esteem as they provide an opportunity to protect the self from the risk of public humiliation and at the same time gain support and information about their sexuality (Hillier et al, 2001; Joinson, 2001).

2.6 The Potential Role of Technology

As a site for sexuality education, network technologies have opened up a totally new array of opportunities to provide the teacher with a range of possibilities to capitalize on modern youths' natural tendency to use the Internet as a resource. One good example is

the VLE. There is a great variety of VLEs but there are some specifically designed (examples include Moodle, WEBCT, and Blackboard) to be used as a teaching resource and aim to facilitate a complete learning and teaching experience. Aspects which are particularly relevant to this study include facilities to greatly enhance communication capabilities through the use of e-mail, message boards, chat rooms and discussion forums, synchronous and asynchronous, one-to-one, one-to-many and many-to-many. In addition, within the VLE environment up-to-date electronic resources such as podcasts, videos and interactive graphics can be uploaded to make the learning process friendlier for students (Martín-Blas & Serrano-Fernández, 2008). According to Gillies (2006) communication capabilities are important because when individuals have to explain their ideas to others, they have to verbalize their understanding, making explicit the difference in what is in his/her mind and his/her utterance, and by doing so obtain a clearer perspective of the topic.

"It has been estimated that 75% of today's youth have used the Internet to look up health information" (Kanuga & Rosenfeld, 2004, p.117). Therefore, it seems reasonable to harness this situation to provide a comprehensive response to young people's sexual health needs by making positive use of its accessibility to engage with young people and thereby support teachers of RSE and enhance their confidence and abilities to carry out their pedagogical role.

However, this raises the question as to which characteristics of technology have the potential to address the concerns raised by both teachers and students of RSE education in the above literature review. Recognising that the key barriers that emerged from the review of literature above was inhibition on both sides; lack of communication and social anxiety, the following review of literature will focus on the features of technology which may help to address those problems.

2.6.1 Inhibition

In an on-line setting it is possible to protect oneself by not necessarily having to reveal one's identity. This is similar to the important role that anonymity provides in many programs for recovery from addiction, compulsion, or other behavioral problems. By providing anonymity the Internet provides a forum where it is possible to be less inhibited and intimidated (Grayson & Schwartz, 2000; Kanuga & Rosenfeld, 2004; Suler, 2004; Christopherson, 2007). Joinson (2001) has called this the on-line disinhibition effect because without having to deal with face-to-face encounters, people can express themselves more openly. For example, according to Joinson (2001) people have a tendency to prefer CMC when conveying a message likely to result in a negative response to the self from another person. Based on their research, (McKenna & Bargh, 2000, p.57) suggest that this is because the online environment lacks the usual "gating features" of face - to- face interactions which involve visual cues, such as blushing, a frown, a bored expression etc. The authors found that shy individuals reported feeling more confident and less shy when online.

In one exception, (Tanis & Postmes, 2007) recognised that the impact of anonymity can be either positive or negative. For example, they found that anonymous electronic communication can be also associated with deviant or antisocial behaviour, such as flaming. On the other hand, Joinson (2001) further argues that cultural relativity about what is hostile, as well as the complexities of psychological dynamics blurs any simple contrasts between disinhibition that is positive or negative. It is suggested that despite the negative outcomes of some studies, because confidentiality and anonymity are key issues, especially when dealing with sensitive issues such as sexuality, the advantages of using CMC may outweigh the disadvantages.

2.6.2 Communication

There is a growing literature that CMCs may facilitate and promote more communication between individuals (Sheperd & Edelmann, 2005; Saunders & Chester, 2008; Rice & Markey, 2008). In fact, early researchers predicted that the biggest impact of computer technology in society would be in communicating with one another (Kiesler et al., 1984).

For example, (McKenna & Bargh, 2000) noted that CMC can be a place to test social skills, overcome shyness in face-to face-interactions and form personal relationships. In addition, the communication capabilities of individuals can be enhanced because in this environment the learners have control over their own interactions and can allow them to respond at their own pace (Rice & Markey, 2008). This can help with in-depth reflection and development of a topic. However, in a CMC environment sustained communication can be impeded by participants' reluctance to take part in online discussions and the difficulty of formulating meaningful contributions. Luppicini (2007) suggests that a certain amount of scaffolding and structure should be provided to support communication and interaction. Such an approach is in line with Vygotsky's (1978) concept of the zone of proximal development (ZPD). Simply defined, it is the gap between what a learner can accomplish independently and what a learner can do under adult guidance or in collaboration with more capable peers (Guiller & Durndell, 2006).

2.6.3 Social Anxiety

Understanding who is more likely to use the Internet as a sexual health information tool is an important aspect of understanding how it may be used effectively to teach and learn sex education. Research has shown that the socially anxious consider Internet communication more appropriate than face-to-face communication to present their true self (Amichai-Hamburger et al, 2002; McKenna & Bargh, 2002). For socially anxious individuals, the Internet is an effective tool that has positive effects on psychological health (Kraut et al; 2002). Unlike shyness which can vary in different degrees throughout one's life, social anxiety may only be elicited in specific situations, such as a relationship and sexuality class.

Other studies however, have disputed these findings and argue that there is a negative correlation between Internet use and social anxiety (Henderson et al, 2002; Mandell & Muncer, 2006). They argue that engaging in online social interactions can lead to social isolation and an increase in shyness. Others predict that CMC is a form of social communication that supplements and extends face-to face- social interactions (Rice &

Markey, 2008; Stritzke et al; 2004). It could be argued that these conflicting findings may be due to failure to consider whether *personality* characteristics impacts on Internet use and which affects it elicits. For example, research focusing on personality traits of Internet users report that people who are more introverted are more likely to use CMCs to chat and join discussion groups (Amichai-Hamburger et al; 2002). Therefore it seems reasonable to suggest that CMC may well fulfil the psychological well-being needs of those teachers and students who feel anxious about discussing sensitive topics in a traditional face-to-face classroom setting.

2.7 Current Technology Enhanced Learning Approaches to Teen Sexual Health Education

Internet websites have become an increasingly important mechanism for the dissemination of teen sexual and health information. The appeal of such websites lies in their ability to tap into the increasing propensity of adolescents to communicate in social networking sites such as Facebook, Bebo, and MySpace. A good example is http://www.spunout.ie/ which provides a comprehensive information service for teens where students can communicate with each other anonymously and read questions and responses posted by others. The relative anonymity provided by such websites allows individuals to obtain information about sensitive issues that they might otherwise be reluctant to discuss with health service providers, family members and peers (Wynn et al; 2009). This premise is supported by recent findings that anonymity was of absolute significance in accessing mental health education and support for college students (Richards & Tagney, 2008).

Additionally, there are numerous commercial adolescent web pages such as http://teenhealth.com/, http://teenadvice.about.com/ and http://www.iwannaknow.org/ that focus on teen sexual health education. However, the ease of finding sexual health information has raised several issues of concern. For example, (Kanuga & Rosenfeld, 2004) found that the World Wide Web makes it easy for adolescents to stumble across sites with nefarious intention, such as sex-seeking chat rooms and pornographic websites,

while searching for answers to questions about sexual health. Other studies reported that many websites contain an overabundance of information with no method of screening for accuracy or reliable information (Kell, 2009; Weiss & Moore, 2003).

Given the importance of adolescents to acquire knowledge of human relationships and sexuality through informed education, and their on-line sexual health seeking behaviour it was considered important to develop an appropriately designed online resource as a communicative and educational support for RSE.

2.8 Theoretical Foundation

The pedagogical foundation of this study is guided by practical procedures based on CMC and the social cultural model which places emphasis on the social and communicative nature of development. These procedures are guided by Vygotsky's (1978) view that the development of thought requires social interaction and exchange with a physical environment. This approach emphasizes learner control rather than the students as a passive recipient of information. From this perspective, computer technology has the potential to develop not just student understanding of content but to also develop their broader interpersonal, communication and intellectual skills (De Leng et al; 2009). An important concept within the sociocultural approach is Vygotsky's definition of ZPD. This emphasizes the gradual removal of the teacher's support for the student as it becomes unnecessary and allows the student to develop. Teachers, no less than other people experience Vygotsky's ZPD with others – colleagues and students (Fisher et al; 2008).

2.9 A Model of Computer Mediated Communication

For CMC, Gilly Salmon (2000) has proposed a five-stage model to develop a supportive on-line environment. This model offers techniques to support students' online communication through stages of access, socialisation, information sharing, knowledge

construction and independent development. Further details of this model are discussed in the next chapter.

2.9.1 Summary

This chapter has presented a review of literature that encompassed sources from a range of disciplinary areas and across the globe. Several themes have emerged. A dominant feature of the data was the lack of resources and lack of comfort for both teachers and students in discussing sensitive topics in the classroom. Young males in particular, have concerns about how open discussions may expose their lack of knowledge. The biological content of sex education was a factor that many young women criticized as bearing no relationship to their 'real' lives in the current climate. They wanted greater emphasis on emotions and relationships. Both sexes wanted more information about STIs, contraception, sexual feeling and gay and lesbian relationships. There was no discussion with the students about what they needed to know and understand. Failure to address gay and lesbian issues may exasperate the isolation felt by those students in a predominately heterosexual classroom. The findings presented here have identified problems with the current delivery of RSE.

Evidence from the review of literature on technology found that CMC has been characterized as more personal and self disclosing than face-to-face interaction. The greater anonymity afforded by the Internet facilitates disinhibition and consequently increases communication and decreases levels of social anxiety experienced by some users. These benefits can greatly increase contributions to a discussion. For the students, CMC offers an innovative opportunity to engage students in a medium that is already familiar to them

Finally, a review of the related literature has provided clear evidence that the tools and affordances of a VLE is a valuable and flexible support for communication on-line.

In the next chapter the researcher will use the evidence from the literature review to inform the design of a VLE for the teaching and learning of RSE.

3. Design Chapter

3.1 Introduction

There are a vast range of models which represent different frameworks for describing particular learning situations. One such design is Gilly Salmon's (2000) five stage model. This was chosen by the researcher as it is located strongly in the constructivist model and supports a student centred approach.

3.2 VLE

The VLE Moodle platform was chosen for this project as it is an open source e-learning platform available under General Public License. It is a course management system that allows the flexible management of content, students and teachers and offers a variety of resources and activities. Its modular design makes it easy to create new courses, adding content that will engage learners and it is designed to support social constructivism pedagogy (Rice & Markey, 2008). The design options offered by Moodle were selected by this researcher, based on the guidelines suggested by the previous literature review and the findings of the pilot study carried out by the researcher at the start of the project.

3.3. Access

Access to the site was simple and self explanatory with options available to the users to access the site (**Figure 1**).
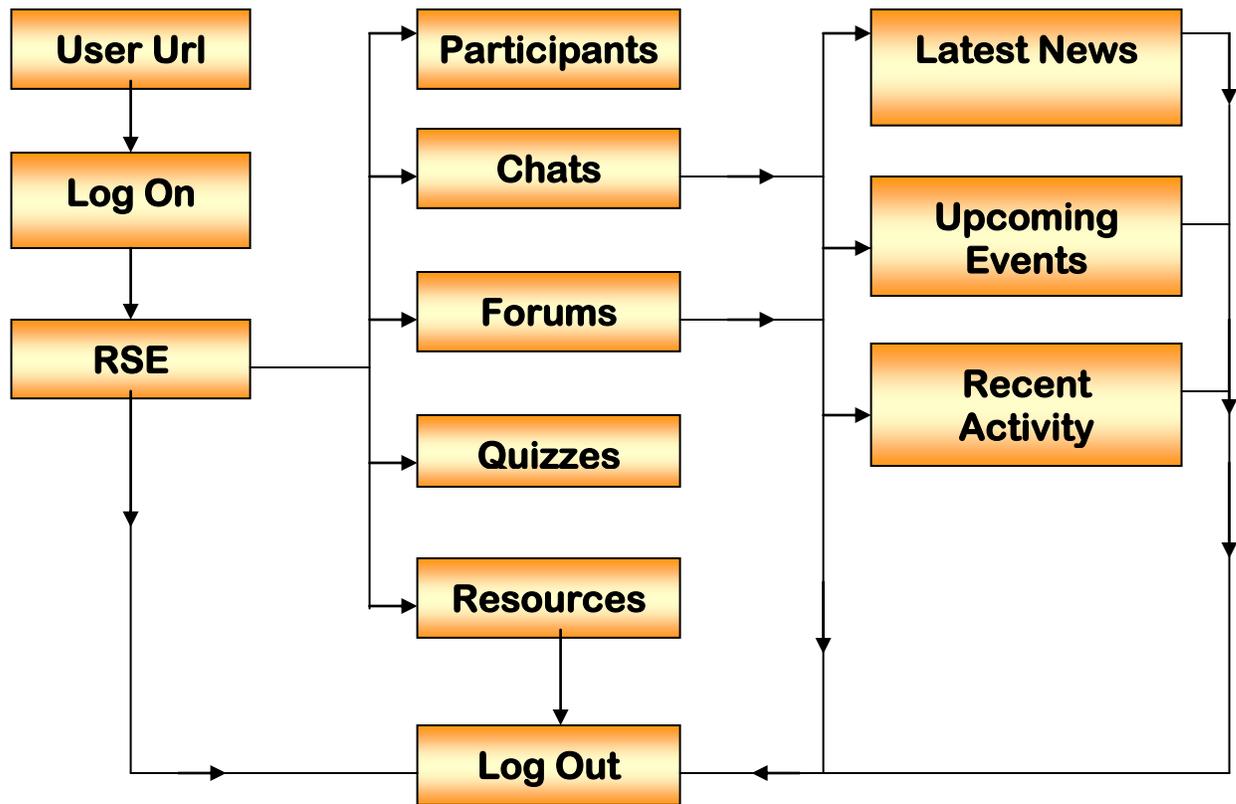
Figure 1: Demonstrates user options to access the course

The layout of the opening screen is neat and clean with ample white space and a large font that makes it easily read. To support the users the researcher provided each user with an individual laminated card with the web address http://blake.cs.tcd.ie/maginn/ and an anonymous user name and password. As per the literature this provided an environment where it was possible to be less inhibited and intimidated by others (Grayson & Schwartz, 2000; Kanuga & Rosenfeld, 2004; Christopherson, 2007). Access was limited to the group members. In this way an element of security was provided.

When the users have logged on to the system, they see on the top left the name of the course – **Relationship and Sexuality Education.** Underneath this is the names of the RSE teachers who will be offering their support as, based on the literature and the views of the members of the pilot study, students identified having authoritative answers to their questions as being important to them (Michaud & Colom, 2003). A welcome message using **Flash** was incorporated into the design as per (Martín-Blas & Serrano-Fernández's, 2008) recommendation that the use of animated graphics makes the learning process friendlier for students. On the right of the screen Moodle provides a **Calendar** resource, a **Message** board and information on which **users are currently on-line**.

3.3.1 Communication

The literature proposes (Gillies, 2006) that learners benefit when they have to explain their ideas and attitudes to others and have to verbalize their understanding, making explicit the difference in what is in his/her mind and by doing so obtain a clearer perspective of the topic. Within the Salmon model this stage focuses on social process and community building. Accordingly, on entering the site, the first block is the major communication component of the e-learning platform – **Discussion Forum**, **Next Week's Topic**. The Discussion Forum, allows students to exchange (read and post) messages to each other and each message has a title, a sender name (anonymous), a date and a time. **Next Week's Topic** informs the students of what the teacher will be discussing in class. The participants could easily click on any of these forums and be brought directly to the relevant information (**Figure 2).**
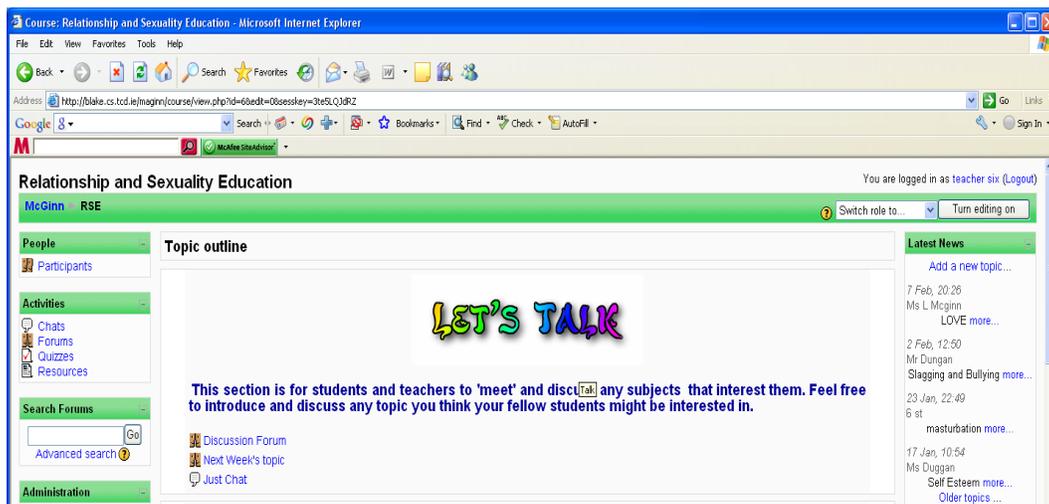
Figure 2: Shows the course screen
with the major communication components of the site.

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In order to strengthen the sense of on-line community a **Chat Room** for nontask interaction and socialization was incorporated. With a topic of the sensitive nature of relationship and sexuality, it was very important that a teacher could respond privately to a student. It is possible within Moodle for the teacher to answer questions personally and privately by sending personal messages to the students.

3.3.2 Information Giving and Receiving

According to the literature (Campbell & Aggleton, 1999) sexuality education must focus on the needs and interests of the young people themselves. Consequently, it was important that the participants were able to open new discussion topics on their own. When users first enter the topic area they are presented with a list of messages and reply titles with the authors' (anonymous) name and the date and time the message was sent. The most recent message is at the top of the list **(Figure 3).**
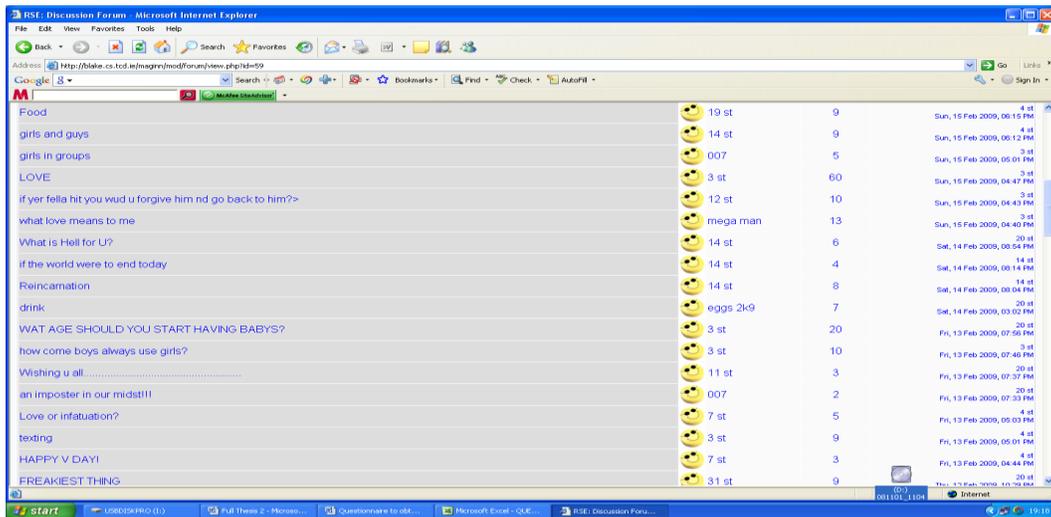
**Figure 3: Shows the discussion forum with the topic,
students' (anonymous) name, date and time message was posted.**

The students could post questions and begin a debate about matters that were relevant to them. To encourage individuals to communicate (Rice & Markey, 2008) suggest giving the learners substantial control over the interactions. The learners could respond at their own leisure, had the ability to edit what was said and the capability to end the interaction at any time. In addition, students could click on the heading **Participants** on the left of the screen and had the option to edit the content of their own profile including personal information, commentaries, and photos.

3.3.3 Supporting Communication

In a CMC environment sustained communication should be supported by providing a certain amount of scaffolding and structure (Luppicini, 2007). To facilitate this, suggested readings, quizzes, images, podcasts and access to links to external knowledge sources were uploaded to the site thereby creating new opportunities to prompt discussions and engage the learners with topics in a novel and innovative way. In addition, the VLE offers the potential for these resources to be retained and shared with members of future cohorts.

3.4 Summary

This chapter has described the design of a VLE with the needs of students of RSE as its central focus. It has drawn upon the views of the previous literature review and students from the pilot study. The next chapter discusses the methodology used to implement the study.

4. Methodology

4.1 Introduction

This study employed a case study methodology. In this chapter the researcher discusses why a case study approach to the research was taken and outlines the relevant ethical considerations in this research project. This chapter also provides an overview of the data collection, and how the data was collected and analysed.

4.2 Case Study Method

Much of modern research tends to use surveys, statistics, or questionnaires when the reasons for research are explanation, description or evaluation. Studies using these methods tend to use large samples of people. Indeed, some would argue that large N studies are the only way one can make general social scientific inferences (Shaughnessy et al; 2003). However, in terms of describing as accurately as possible the fullest most complete exploration of the case, it has been argued by some researchers that other research methods are needed (Bassey, 2008; Stake, 1995). For example, a case study approach that entails assembling data relating to the research question from a range of sources generates insights from a multiplicity of perspectives with the aim of achieving an in-depth understanding through a process of discovery (Yin, 2003). Critics of the case study method, (Shaughnessy et al; 2003) have argued that it is unscientific in nature and can offer no grounds for establishing reliability or generality of findings. However, Yin (2003) states that when specific procedures are followed, the researcher will be following methods as well developed and tested as any in the scientific field. In addition, Stake (1995) has suggested that the case study as a research method is valuable not because by studying it we learn about other cases or about some general problem, but because we need to learn about that particular case. The case study method is applicable to this research because it can be used to examine the research question, which is to access detailed information on the experiences and views of students and teachers in a

contemporary real-life situation within a particular environment. "Significance rather than frequency offers the researcher an insight into the real dynamics of situations and people" (Cohen et al; 2007, p. 258).

4.3 Data Collection

Because case studies aim to explore the complexities of phenomena from several different angles and perspectives, a number of research instruments are often used to gather information and data, the combined analysis of which provides an understanding about the complexities under study (Yin, 2003). With this recommendation in mind, the researcher used both quantitative and qualitative methods to address the research questions. Seven data sets were used for the study; student pre-study questionnaire, student post-study questionnaire, interviews with students, interviews with teachers, information from artefact traffic and the discussion board and interviews with two external experts in the field of adolescent sexual health. This had a number of advantages. The variety of data sources provided rich material for examination while supporting the trustworthiness of the findings through triangulation (Yin, 2003).

4.3.1 Questionnaires

Two questionnaires were designed for the students. In the first questionnaire demographic questions were asked such as age, gender, as well as their experience with online communication (**See Appendix 1**). Following completion of the study the participants were asked to complete a questionnaire designed to ascertain their overall perceptions of communicating on-line in a RSE class. In consideration of the students' age and to avoid confusion it was decided not to offer the students open ended questions but instead the answer options were designed to give the students a range of positive and negative responses from a multiple choice of four or five options (**See Appendix 2**). The completed results of the questionnaires **(See Appendix 3)** were tabulated manually and then compared with the transcripts from the interviews.

4.3.2 Interviews

On completion of the study the participants were asked to conduct a one-to-one interview with the researcher to obtain more detail about individual thoughts and feelings about the artefact.   Six of the students and the three teachers volunteered to take part.   Each interview with the students lasted an average of twenty minutes **(For example, see Appendix 4)**.   The teacher interviews lasted approximately forty minutes each **(For example, see Appendix 5)**.   Even though the interviews were semi structured, the respondents were given the opportunity to speak freely and to elaborate on their answers. To increase the reliability of the study, audiotape recording were made of the interviews and transcribed verbatim.   In addition, Creswell (2004) suggests that to ensure the validity of findings in a case study, external individuals should review the project. Therefore, two external experts in the field of adolescent sexual health were interviewed at their place of work for an independent evaluation of the site. A number of open-ended questions were asked and notes of the answers were typed up after the interview.

4.3.3 Coding and Theming

Data from the student interviews and teacher interviews were analysed and compared with the responses from the questionnaires to gain an overall understanding of the data and to observe any similarities or discrepancies. The researcher first made a preliminary coding table **(See Appendix 6)** and then codes were defined and developed from the data based on keywords, and then divided into categories of similarity. A similar procedure was followed with the data from of the discussion board **(See Appendix 7).** A concept map was constructed from the data to get an overall view of the themes that emerged. This visual approach enabled the researcher to make sense of the data **(Figure 4).**
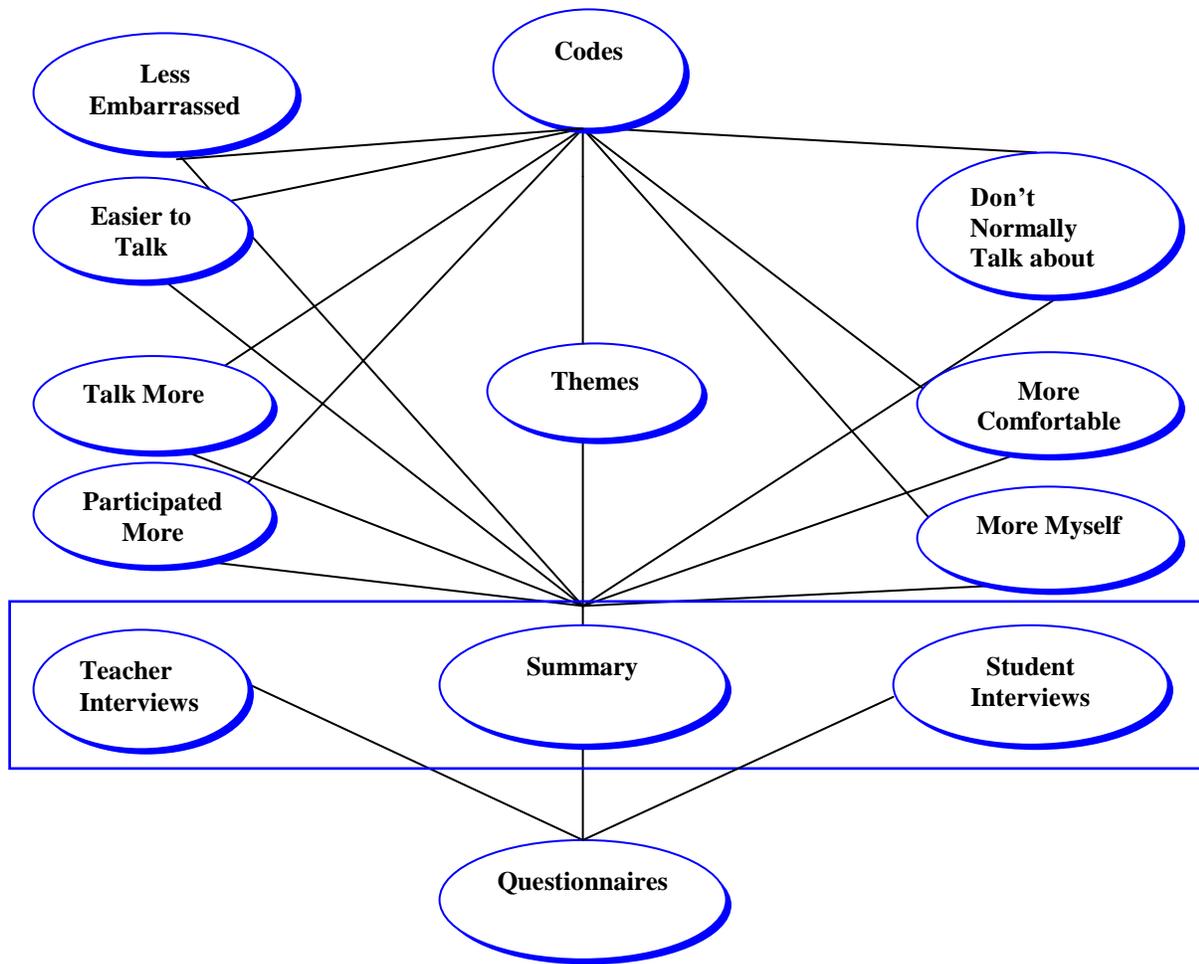
Figure 4: Visual concept map

4.3.4 Artefact Traffic

It was considered it was worth analyzing the log information from Moodle to demonstrate whether the program was used extensively and to assist in answering the research questions. Usage is a central issue because applications that are not accessed cannot contribute to the performance of the computer user (Gelderman, 2002). Moodle provided a lot of information about the students' usage of the artefact. This showed who used the program, the number of contributions and how often they used it. Once downloaded, the log data was sorted with Microsoft Excel, creating a single spreadsheet containing the complete set of data logs for the entire study. A frequency analysis chart was then conducted from the data set, grouping by student (anonymous) names **(Figure 5).**

Collect Moodle Data

Transfer Results to Excel

Interpret Results

Figure 5: Method of data transfer

4.3.5 Discussion Board and Content Analysis

There is extensive literature on ways to measure content analysis in terms of on-line participation. For example, the frequency of messages (Davidson-Shivers et al., 2001), types of messages (Hakkarainen & Palonen, 2003) and measuring the depth of threads (Hewitt, 2005). The researcher opted for measuring the depth of threads. The rationale for the researcher choosing to examine the depth of threads as a measure of successful communication was guided by Hewitt's (2005) view that the goal of an on-line discussion forum is to enable students to have discussion or on-line dialogues, a notion consistent with (Vygotsky's, 1978) social constructivist perspective of interaction. For instance, the postings could be due to many single postings with little interaction between the participants. Guided by (Hewitt's, 2005) recommendation a depth of 6 threads was considered by the researcher to indicate a way to see if conversational exchanges or discussions have taken place.

4.4 Ethics

Confidentiality and anonymity of data are key issues in social research (Creswell, 2004). Given the sensitive nature of the research topic it was important that participants had confidence that their anonymity and confidentiality would be maintained. Consequently all participants were assured of privacy and confidentiality. The participation of group members was voluntary and each member gave their informed consent. The group was fully informed prior to the study about the objectives and purpose of the research. They were also given the opportunity to withdraw at any time from the study (**See Appendix 8**). Consent was also sought and received from the school management for the study.

4.5 Participants

This study was conducted at a Dublin co-educational post-primary school. The participants were 3 staff and 28 students of this school. The researcher chose a

convenience sample based on accessibility and availability factors of the participants involved in the study. Despite the disadvantages that arise from their non-representativeness, convenience sampling can prove perfectly adequate where researchers do not intend to generalize their findings beyond the sample in question (Cohen et al; 2007). The researcher works as an administrator /I.T. teacher in the same school.

4.5.1 Teachers

The teacher sample consisted of 3 RSE teachers. The teachers who volunteered to participate in the study were very open to implement new and innovative ways to teach RSE. All three teachers had between 5-15 years teaching experience and two of the teachers were female and one was male. All of the teachers had some previous experience of using Moodle.

4.5.2 Students

In the student sample there were 28 participants from the same Dublin school (m =17), (f= 11) (m=16 yrs). In order to prevent any negative effects of the use of the site, participants agreed to abide by a **Code of Conduct** agreement **(See Appendix 9).**

4.6 Pilot Study

In December 2008 a pilot study was conducted with 6 students (3 males and 3 females) from the same class. The purpose of this was to gauge initial reaction to the site, and to identify any potential problems with the design, technical difficulties or site usage. Participants were instructed to think about their experience during the study and on completion were interviewed to assess their overall perception of the site.

4.6.1 Results of Pilot Study

Data was obtained from 5 of the six students only as one student was absent due to illness. Overall, the results of the pilot study **(See Appendix 10)** suggested that students formed a favourable impression of the site and felt they could communicate comfortably. Additionally, the pilot provided strong support, consistent with the literature on the effect of anonymous on-line interaction, which underpins the theory of on-line social interaction, as proposed by (Richards & Tangney 2008; Christopherson, 2007; Joinson, 2001; Grayson & Schwartz, 2000).

4.7 Main Study and Procedure

First, it should be noted that for the duration of the study, the on-line RSE class replaced the students' traditional class. The main study started with a workshop during which the software was explained to the students and to allow them become familiar with its usage. In this session they learned how to use the features of the site, for example, how to post and reply to the discussion forums. This procedure took about 40 min which corresponds exactly to a standard class.

During the classes, each student worked on a separate computer in a computer lab. Students sat as far away as possible from their classmates in order to ensure as much privacy as possible. The relevance of this was informed by ethical considerations when the subject matter is a sensitive area the researchers should act in a responsible manner to preserve the dignity of the participants of a study (Cohen et al; 2007). The web-site was password protected to ensure only the participants could access it. To maintain anonymity all participants were instructed not to disclose their passwords to their fellow students at any time during the study. Students were encouraged to use the web-site as often as they liked outside school hours

First, the students were encouraged to communicate on the site to discuss any issues relating to RSE that they felt was relevant to them. All students were required to post their own questions to the forum before they reacted to the postings of the other students in the group. This was required so as to stimulate some initial diversity of ideas.

Students could respond to their classmate's postings either synchronously or asynchronously. To encourage activity various topics of discussion were started by the researcher at the beginning of the study. The three RSE teachers also used the program to respond to questions posed by the students and offer support where needed.

In addition, the study presented the students with several tasks consisting of issues relating to RSE. Each week during the study, the teacher posted a topic relating to the following week's class. The class focus was on relationships and sexuality, but several topics were included in line with the trend towards a more holistic approach to the subject. Topics covered included (1) Self esteem (2) Safe sex (3) Love. The tasks consisted of topics that the students had to think about and write an answer to on the on-line discussion board. To support them the students had access to suggested readings. These were provided in the form of short articles, typically consisting of one to two brief paragraphs relevant to the topic (**See Appendix 11**). After viewing the course materials and posting to the class discussion the students were required to take a weekly quiz in order to reinforce their knowledge on the topic.

The teachers also had access to the results of the quizzes and therefore teachers could be aware of what areas required more in-depth explanation in class or online.

4.8 Summary

In this chapter the research methodology was outlined. The data collection tools have also been described. In the next chapter the data is analysed and the findings considered in terms of how they answer the research questions.

5. Data Analysis and Findings

5.1 Introduction

In this chapter the results are presented and describe how they relate to the research questions. Discussions are made following each major finding to clarify the results. The findings suggest that the students have openly embraced the VLE and support its adoption in a RSE class. RSE teachers also indicated that they saw a value in the VLE to support communication but with some reservations. Lack of time and extra work overload were seen as barriers to its integration on a full time basis.

5.2 Research Question One

Does the integration of a VLE in Relationship and Sexuality education contribute towards overcoming traditional face-to face communication barriers of inhibition, embarrassment and social anxiety? As described in the previous chapter data from the student questionnaires, transcripts of student and teachers' interviews, artefact traffic and discussion boards were used to address this question. From the preliminary coding table **(See Appendix 6)** codes were refined and developed from the data based on keywords and then divided into categories of similarity. **(Table 1).**

5.2.1 Questionnaire Results

Codes from student questionnaire	% Students
I felt I could 'talk' more online	75
It is easier to 'talk' online	54
I can be more myself online	57
I felt more comfortable online	86
I was less embarrassed online	75
I could talk about things I would not normally talk about in class	79
I participated more in the online class than I would in a normal class	71

Table 1: Questionnaire results

5.2.2. Communicating Online

The majority of students 75% (n=21) reported that they communicated more in an on-line RSE class compared to a traditional class. This finding was confirmed by teacher three who stated in her interview that "only about 5 or 6.of the class leaders would talk in class. Rarely would you get a whole class talking." In addition, when this result was compared with statistical analysis of the on-line discussion forum (1857 posts in total and an overall average of 22 posts), results suggest that a high level of interaction did indeed take place. However, despite overall positive feedback, there were still a number of student users 14 % (n = 4), two girls and two boys who were not very receptive to participating in the discussion platform and preferred the more familiar learning environment. Three students, 10 % (n=3) two boys and one girl said they talked about the same amount as in a traditional class. Interview comments from one student noted:

> "Yes, I felt I could talk more …….cos boys dominate our class……..because they are more confident about it. In class they are more like shouting and joking about it, so I find it hard to talk in class with all the messing that goes on."

Excerpt 1: From interview - Student 3
- On communicating online.

5.2.3 Ease of Communication

The result from this score when reviewed in isolation shows an inconsistency with the overall findings with male students having a significantly higher 'easier to talk' on-line score 76% (m=13) than female students 18% (f = 2). One possible explanation maybe that further investigation from the student interview feedback revealed that females have less difficulty with discussing topics of a personal nature with friends of their own sex than males so therefore the on-line environment had no significant impact on this issue. This was also observed from a comment from Teacher One in her interview – "The girls listen intently to every word you say without necessarily partaking in the discussion.

30

Girls talk to each other but they won't talk in front of boys." As one female student explained:

> "Ye, I talk to my friends all the time about personal stuff, so no I didn't really see any difference like, but sometimes you just don't want to say it out loud in front of them and maybe they don't really know the answers."

Excerpt 2: From interview - Student 7
- On ease of communication.

5.2.4 Comfort Level

The overall score for feelings of comfort revealed that 86 % (n=24) students felt comfortable enough in the on-line environment to exchange information and ideas. One male reported that he did not feel more comfortable and one said he "doesn't know". Two females reported that they only felt comfortable "sometimes" when on-line. Feedback from the student interviews revealed that negative comments from other students influenced students' perceptions of comfort level. Confirmation of the effect of negative comments was also noted by the researcher who observed from interaction on the on-line artefact that a particular student who received the following comment did not access the site again:

> Don't waste peoples time by adding a topic filled with such immaturity!!

Excerpt 3: From on-line artefact –
Student 30 replying to Student 5.

5.2.5 Less Embarrassed

With respect to less feelings of embarrassment in the on-line environment, the overall result was 75 % (n=21). Several explanations may be surmised for this high score.

Anonymity was perceived as the key factor by the majority of participants 82% (n= 23) for communicating more in the on-line environment, particularly at the beginning of the study when students did not reveal who they were to each other. Analysis of the on-line artefact also highlighted the importance of anonymity to the students with 18% (n=5) of the students changing their passwords in an even further effort to remain anonymous when students began to guess who was whom among their classmates. Comments from two student interviews are illustrative:

> "It was easier to talk about stuff cos you're not embarrassed and knowing that nobody could find out who you were was great."
>
> "Sometimes it is embarrassing to ask things face to face. If I had to put my own name up there I don't think I would have been so open."

Excerpt 4: From interviews - Students 3 and 18
- On feeling less embarrassed online.

5.2.6 Talk about things I would not normally talk about

The score from this issue was 79% (n=22) with participants reporting that they felt able to talk about topics on-line that they would not normally talk about in class. While this finding identifies a clear assertion on behalf of the students, it should be noted that the participants were encouraged not to limit their interactions on any topic they chose and may account for the difference. A comparison with the teacher's perception of the students' interactions elicited this comment from Teacher one's interview – "Its funny how you think you know people and yet on the site there are so different than they are in class. The people you think are shy in class have behaved differently on the site and able to use words that they wouldn't use in the classroom." A comment from one of the students confirms this:

> "I just wouldn't ask those questions in class and you don't really know if the teacher would answer the question or if the teacher would want to talk about those kinds of topics."

Excerpt 5: From interview - Student 4
- I would not normally talk about in class.

5.2.7 More Myself Online.

Results from the questionnaire about the students' perceptions of whether they felt they could be more themselves online gave a mixed result. Overall 57 % (n=16) responded favourably to this issue, describing how the on-line environment provided an opportunity for shy people to express themselves more. 11% (n=3) replied "No", 30% (n=8) replied "sometime" and one student answered "Don't Know". An example of a student comment:

> "It did help, cos you could say things about yourself and be more like yourself. I think that was really good for people who are too shy in class."

Excerpt 6: From interview - Student 22
- On being more myself on-line.

5.2.8 Participation

Results show that 79 % (n=20) of the students reported that they participated more in the on-line class than they do in a traditional class. Further feedback from the student interviews revealed that some of the factors that influenced this result were the short duration of a normal class when the teacher does most of the talking with little time for students to ask questions or discuss matters that are important to them. A Comparison with the teachers' views of lack of time to discuss things in class was also noted by the researcher. For example, Teacher Three stated in her interview that "often you just don't have the answer to the question and no time to think so you tend to brush it off. "The opinion of one student:

"Ye in class, they just tell us about things………..but we can't really ask them any questions". I never talk in class. I don't really know why…..maybe its cos I would be slagged if I said something stupid and they would all laugh".

Excerpt 7: From interview - Student 20
- On participating on-line.

5.3. Content of Discussion Board

An examination of the data shows that the largest number of interest and replies was in the **Relationship/Romantic** category with 32% of the questions relating to information seeking on how to conduct themselves within romantic situations. The longest thread (60) was in this category, on the topic of Love. Interestingly, both boys and girls showed an almost equal interest in these topics. However, consistent with previous studies in CMC (Kanuga & Rosenfeld, 2004; Christopherson, 2007) there were distinct gender differences in some of the other categories. For example, in the category **Sexual Questions** all of the comments (19% of total) were posed by the male participants, although replied to by both males and females. In the **Body Concerns** category, gender differences in types of questions were noted, with boys concerned with their body's sexual organs and functions, while girls were primarily concerned with body image. The **Grooming** category was dominated by questions from females with only one male asking "if girls liked tattoos on boys". The **Relationship/ Sexual** category was quite low (4% of total). Interest in the **Peers/ Friendship** category was quite high (16% of total) with most of the comments relating to how to deal with bullying and slagging from peers. Contributions to the **Humour** category did not start until week 2 of the study and perhaps this can be attributed to a growing familiarity and comfort with each other and the environment. Illustrative examples are highlighted in **(Table 2)**.

Code Category	Illustrative Examples	Total	Replies
Personal Revelations	"I think I'm bisexual, cos I fancy my friend. What should I do" " My parents are getting divorced"	13	42
Relationships - Romantic	"Best words to use when asking a girl out?" "What's the best way to break up with someone?	59	465
Relationships - Sexual	"How long should you wait before you have sex with someone?" "Does anybody know if you can get cold sores from kissing sum1 who has one on their mouth?"	8	30
Sexual Questions	"Recently I haven't been able to ejaculate when I masturbate. I still have wet dreams but I don't no wats goin on like? Its just stopped" "How do you use a condom"	35	179
Body concerns	"My erection is just around 6", but as embarrising as this was to ask, is that normal? Like is it small? "Are there exercises to make your penis stronger?"	15	82
Peers/ Friendships	"I'm a loser. I'm a fridge and evry1 hates me" "What do I do if I think someone hates me?"	29	123
Grooming	"Do guys like tattoos?" "Ok so what do guys think about a girl with a pierced belly button??Skanky? Sexy?? Total turnoff??	10	80
Humour	"I think my ginger hair is soooooooo sexy"	29	137

Table2: Shows the category codes

from the discussion board.

5.4 Artefact Traffic

A detailed analysis of site use during the four weeks showed there were a total of 1857 posts to the site. Participants tended to use the site every day, most particularly in the evenings after 8 pm from their home computers. The results showed that 64% (n=18) of the students used the site outside of class. Responses from the student survey reported that of those who did not use the site outside of class 3 said "they had no time", 1 said they "could not be bothered", 1 said they "could not remember the site name" and 5 said

that as they were boarders they had very limited access to the school computers. Three participants took on the role of frequent correspondents and provided much information and support to the others. In terms of site demographics, males were marginally more likely than females to use the site. There were 1068 posts by the 17 males and 789 posts by the 11 females.

For the sample of 28 students who participated in the study a relatively large degree of variation in the number of posts logged to the website was observed. The sample mean was $\bar{x}_1$=66 with a standard deviation of S_1=116.5, producing a coefficient of variation of C_{v1}=1.76. The result is not surprising given that three of the students (3, 14 and 20) posted 25%, 18% and 17% of the posts respectively **(Table 3).**
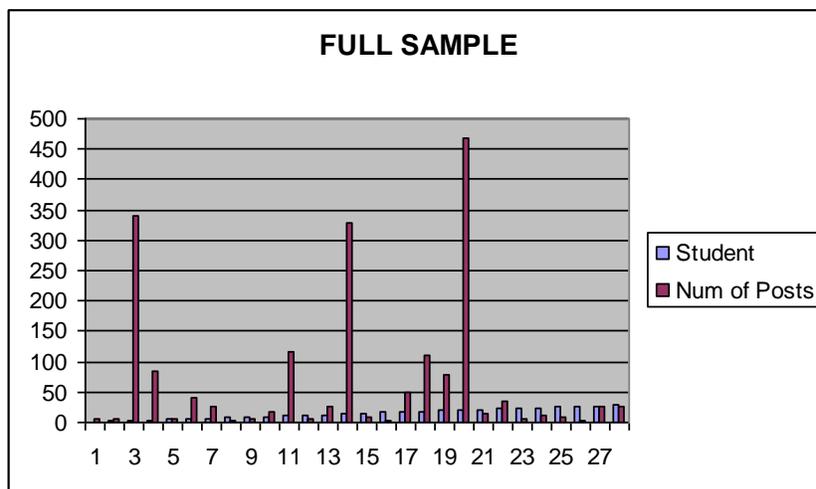
Table 3: Shows artefact traffic using full sample.

By looking at the results above, it appears that the data is skewed by the presence of these high-participation students and the researcher considered this merited deeper investigation. For the purpose of clarity**,** a further analysis of the data was made to determine what the results would be without the influence of these outliers. If these students are removed from the sample then the sample statistics become C_{v1}=1.76 versus C_{v2}=1.07(based on a sample mean $\bar{x}_2$=22 and sample standard deviation S_2=22.9). **(Table 4).**
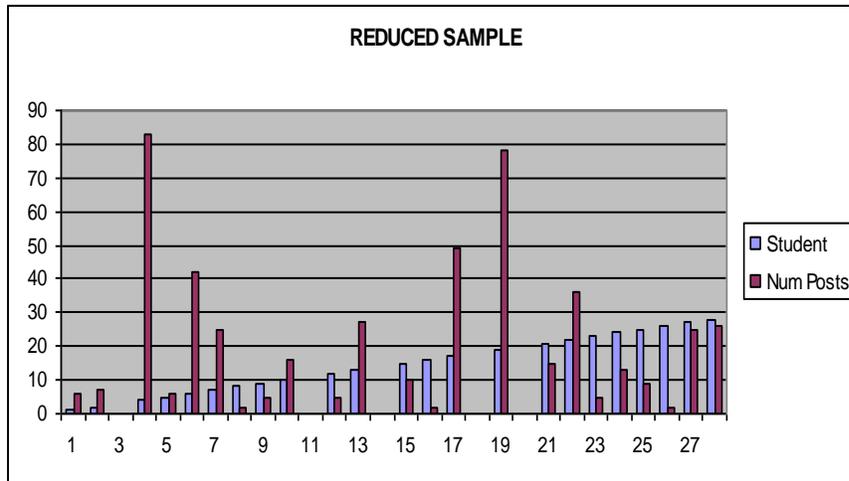
REDUCED SAMPLE

Table 4: Shows artefact traffic using reduced sample.

5.5 Discussion Board

The results from the discussion board indicated that of the 238 threads 103 achieved a depth of 6 or more levels. Answers were short, mainly consisting or one or two sentences. Most of the contributions ranged from a few words to a few sentences with the odd 5-6 sentence posting. In general the students used first-person language and most of the comments received replies.

In week one 86% of group members contributed to 21 levels of threads with 79% contributing two or more threads. This increased to 93% in week 2 which suggests that students had become more enthusiastic about contributing to the site with 81% multiple postings. Week 3 reached a pinnacle of postings with 100% of students contributing but with slightly less percent of multiple postings. In the final week again 93% contributed with 82% multiple posting of two or more threads. The depth of threads varied according to group interest in the topic with the highest thread achieving 60 deep levels on the topic of love. This may be explained by the fact that this week also coincided with Valentine's week and the topic was selected for discussion in the class that week. With the exception of this particular thread the average thread was 12 levels deep **(Table 5)**.

Week	Number of threads over 6 levels	Percent of group who contributed	Percent of same student who made multiple postings (i.e. two or more)
Week 1	21	86	79
Week 2	24	93	81
Week 3	27	100	70
Week 4	31	93	82

Table 5: Frequency of threads over 6 levels

The on-line questions garnered different kinds of replies with providing personal opinions the most frequently used reply type. To help illustrate the interactive nature of the discussion board, an excerpt from the on-line dialogue is provided **(Table 6).**

Re: If your fella hit you wud u forgive him nd go back to him?   **By 12 st – Thursday, 12 February 2009, 10:56 AM**
By 24st – Thursday, 12 February 2009, 10:56AM   **If he was only joking then I wud hit him bak..but if he ment it then I wud leave him cos obhiosly he dusnt respect you……if he was joking but it really hurt then I wud say it to him to stop.**
By 31st – Thursday, 12 February 2009, 10:58AM   **Hit him and run fast!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!**
By 9 st – Thursday, 12 February 2009, 11:01AM   **Well if yas were messing dats ok but if he wasent then walk away and dnt go back even if he was drunk r antting it does not make it ok and don't be afraid to walk way you will be ok!!!!!!!any man who hits a girl is not a real man!!!!!!**
By 5st – Thursday, 12 February 2009, 11:03 AM   **I would slap him silly till he is blue in the face**
By 3st – Thursday, 12 February 2009, 11:02 AM   **No I would give him a slap and then dump him**

Table 6: Example of group discussion

5.6 Research Question 2

What elements of the VLE help to support communication in a Relationship and Sexuality class? As described in the previous chapter results from the Moodle log data, students' questionnaire and students' interviews were analysed to address this question. It should be noted that not all of the features of the VLE were enabled. For example, the e-mail feature was not activated as per the students' preference as they felt this would have an impact on how anonymous they were on the site. 11 elements were examined **(Table 7).**

Categories	% Students
Communication Elements	
Available 24 hours	64
Anonymity	88
Discussion Board	79
Private Message Facility	11
Resources	
Quizzes	68
Suggested Readings	43
Educational Elements	
Increased knowledge about Relationships	50
Increased knowledge about Sexuality	68
Technical Elements	
Editing/ Management tools	50
Ease of Use	89

**Table 7: Shows the % of the students' responses to
the elements of the VLE that helped support communication.**

5.6.1 Availability 24 hours

The availability of the site on a 24/7 basis was perceived as a very valuable asset towards communication by the students with 64% (n=18) of the students indicating this in the questionnaire. Not surprisingly, this was confirmed by a further analysis of the Moodle log data which revealed that of the 1857 posts to the site, 901 or 49% were made between

39

8-10pm. There were 52 posts made between 11pm-3.am and 12 posts between 7.am and 9.am. In addition, there were 477 (26%) posts made over the weekends. i.e. Saturday and Sunday. One student commented:

> "It was much more interesting cos you could go on at any time and see what people were saying and who was talking to who."

Excerpt 8: From interview - Student 18
- On availability 24 hours.

5.6.2 Anonymity

Anonymity was a very significant factor for the students towards communicating on the site. Specifically, 88% (n=24) of the students considered this a very significant factor. Supporting evidence of this came from the Moodle site with 18% (n=5) of the students changing their passwords in an even further effort to remain anonymous when students began to try and guess among themselves who was who among their classmates. Notwithstanding, 7% (n=2) of the students indicated that anonymity only helped communication "sometimes", 3% (n=1) said they communicated "the same" and a further 3% (n=1) student reported "no" in this category.

> "I changed my name cos everybody was trying to guess who everybody was and I really really wanted to be anonymous cos then I could say what I really wanted to say."

Excerpt 9: From interview - Student 18
- On anonymity.

5.6.3 Discussion Board

Particular interest was on the use of the discussion board with most students, 79% (n=22) reporting in the questionnaire that this was the most important element of the VLE that encouraged communication. 18 % (n=5) of the students replied "sometimes" on this

issue and only one person said "no". Comment from two of the students is illustrative of some of the reasons why the discussion board was considered so popular:

> "It is good to know everybody else's opinion about things; it gives you a kind of confidence knowing everybody is in the same boat with problems and stuff."
>
> "I felt I wasn't been judged and could be more myself."

**Excerpt 10: From interview - Students 20 and 22 –
On using the discussion board.**

5.6.4 Chat Room

The chat room was not perceived by the students to be of much value in communicating with only two chat room conversations initiated by two of the students. The interviews revealed that this was due to two factors. The slow transmission resulted in very irritating time lags between responses, and they were reluctant to use it after school as it could not be used without initiating contact with the other students first and therefore revealing who they were.

5.6.5 Quizzes.

There was a mixed response to the quizzes in the questionnaire. While 68% of the students completed the Quizzes, only 57% (n=16) found them helpful, 29% (n=8) found they were helpful "sometimes", 11% (n=3) said 'no' and 3% (n=1) said they "didn't know". All three of the teachers thought the quizzes good for stimulating discussions. "As teacher two observed in his interview "they were a great way of breaking the ice in the classroom." Of those who found them helpful among their reasons the students commented:

"Doing the quizzes and stuff made the classes really fun and interesting"
"It was a great new way of learning".

Excerpt 11: From student questionnaire
- Anonymous - On using the quizzes.

5.6.6 Suggested Readings

There was a discrepancy in the data for the results in this category. While 54% (n=15) of the students claimed in the questionnaire that they found the 'Suggested Readings' helpful, an analysis of the Moodle data revealed that only 43 % (n=12) of the students, in fact, accessed them. This required further investigation and therefore the researcher recalled some of the students for a short interview to clarify the result. One student's explanation:

"Well, we were supposed to read them, but I just didn't want to say that I hadn't."

Excerpt 12: From student interview – Student 3
- On using the suggested readings.

5.6.7 Increased Knowledge about Relationships

In the questionnaire 50% (n=14) of the students reported their knowledge about relationships had increased while using the site. However, 21% (n=6) reported their knowledge increased only "sometimes" and 29% (n=8) asserted "no" in this category. One student commented:

"Ye, I kinda knew all that stuff anyway, but it was good to see what other people thought"

Excerpt 13: From student interview – Student 11
- On Increased knowledge about relationships.

5.6.8 Increased Knowledge about Sexuality

Overall, 68 % (n=19) of the students perceived that their knowledge about sexuality topics had increased, with 14% (n=4) of the students saying their knowledge had increased "sometimes" and 18% (n=5) of the students claiming "no" increase of knowledge on this issue. With respect to the total score, the males had a significantly more positive response with 76% (m=13) reporting an increase of knowledge in this area than females 55% (f=6). The data from the VLE also indicated that boys enquired most often about subjects of a sexual nature than girls. A comparison with the teacher's view of boys asking questions in class is worth noting. For example, teacher two stated in his interview "Lads will always be lads and act the maggot. They will try and push off that they know everything but you know they don't and you can see them whispering to each other but they just wont ask." Examples:

I get really horny at night. Is this normal?

Is masturbation natural?

Excerpt 14: From VLE – Student 6 and 20
- On asking for knowledge of a sexual nature

5.6.9 Private Message Facility

Although students could communicate privately with each other and the teachers on the site, the data revealed that only one student sent a private message to a teacher, while two students, one male and one female conversed privately with each other.

5.6.9.1 Editing/Management Tools

The editing tools of the VLE were used by the students for several purposes. 29% (n=8) of the students used the editing/management tools to change their passwords and profiles. 11% (n=3) uploaded images and photos and 50% (n=14) used the emoticons to express various emotions with their comments. Examples:

> "Thanks 20st!..your a great person!☺"
>
> "Hey.............I didn't get one either☹. Guess we shud start a club"

**Excerpt 15: From VLE – students using emoticons
to add expressions to their thoughts.**

5.6.9.2 Ease of Use

86% (n=24) of the students found the site easy to use. 7% (n=2) reported they thought the site easy to use "sometimes", while one student stated "no" in this category. Ongoing technical problems with the school computer system and lack of availably outside of school hours contributed to some of the students finding the site difficult to use.

5.7 Research Question Three

Do students see a value in using a VLE as a supplemental communicative tool?
After analyzing the questionnaire responses and interview transcripts it became clear that most students 68% (n=19) saw a value the use of the VLE to either replace or supplement the traditional class**.** However, despite most participants highly valuing the VLE for communication purposes, 21% (n=6) felt that the traditional class still had value "sometimes", while two students answered "no" in this category and one student said " don't know" **(Table 8).**
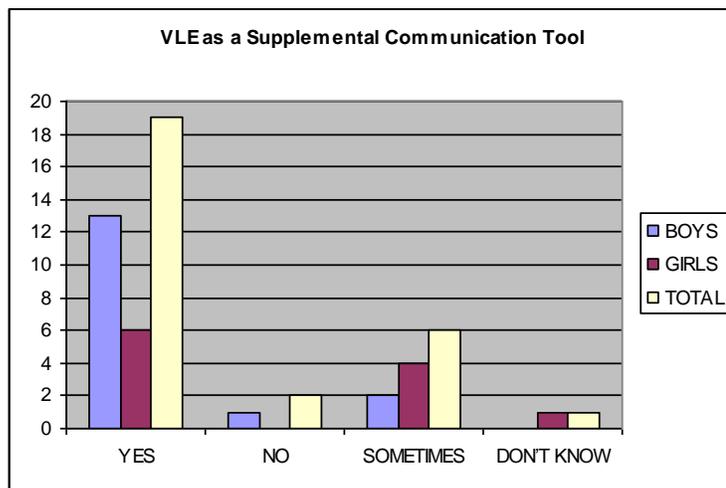
Table 8: Shows the students' responses.

Some comments from the students:

> "It was a really good idea and I enjoyed asking my classmates about things I wouldn't normally ask."
>
> "I would like to use it sometimes only, cos there are some things its nice to talk about face to face."
>
> "Please let us use it for the rest of our RSE classes for the rest of the year."
>
> "I think it was a very good thing to do and helps everyone to talk more freely."
>
> "No, I wouldn't use it because I couldn't be bothered."
>
> "It was really cool; it provided a new way of learning."
>
> "I really hope we use it more often."
>
> "It was brilliant."

Excerpt 16: From student questionnaire
–Some student comments-

5.8 Research Question 4 Do teachers see a value in using a VLE as a supplemental communicative tool?

Overall, the teachers enjoyed and valued the VLE for communicative purposes. An analysis follows the elements they identified as supporting communication **(Table 9).**

Categories	Comments
Available 24 Hours	" I have my own computer access; I have my own office, so it was great to go on as many times as I wanted, when I wanted".
Easier to talk on-line.	"In a face to face discussion I think that some of the students are very awkward and embarrassed. In the online site you could talk about ANY topic regardless and not necessarily have to be concerned about the cringing student in the corner who was completely mortified by it"
Resources	"Given that we have so little money for resources now, it is great that they are there to use and even if a teacher leaves, they are they on the site for someone new to use"
Private Message Facility	" I didn't use this much, but I can see the potential, particularly for girls who like to ask things in private"
Announcements	" It was great just to be able to put up what you were going to talk about the following week instead of having to repeat it all the time to the class"
Could Upload Current information	" I uploaded a podcast about bullying, which we would not have time to listen to in an ordinary class, so I asked the students to listen to it outside of class and tell me what they thought"
Had time to Reflect before Replying	"Because you didn't have to answer a question there and then, you were not put on the spot and could reply when you had thought it out properly. Also I could edit what I said and you cant do that in an ordinary conversation"
More Interactive	"Using a computer automatically gets the kids involved Because they are so used to using a computer. They are on social networking sites all the time. Its their way of communicating"
More Open Environment	" I was totally amazed by the honesty of the students on the site"
More Respectful Environment	" Sometimes it is hard to discipline the class when certain topics come up, particularly when the boys are being very vocal and boisterous , so I was amazed to see how mature and supportive they were to one another on the site"

**Table 9: Shows the teachers' response
(From Interviews).**

5.8.1 Available 24 hours: There was a difference of opinion among the three teachers on this issue. Teacher three welcomed the fact that the site was available outside of school hours as she accessed her own Bebo and Facebook sites at the same time and saw it as

simply another way of communicating with her students. Teachers one and two perceived it as "working" outside of school hours and therefore had reservations about the extra time and workload using the site on a 24 hour basis would involve. A suggestion by one of the teachers " could we make it available maybe two evening a week and take turns in answering the questions".

5.8.2 Easier to talk online: Again, there was a difference in attitude among the teachers on this issue. Teacher three found it easier to talk about topics on-line that she felt would cause embarrassment to both her and the students. She said:

> "I think the biggest fear as a teacher in a situation like that is being asked a
> question that you just don't know how to answer."

Excerpt 17: From teachers' interview
–Teacher Three - On easier to talk on-line

On the other hand, for teacher Two, this was at odds with his usual pedagogy approach and questioned whether this may potentially damage his existing rapport with pupils. He stated:

> "I think I would miss the cut and thrust of conversation that goes on in a normal
> class".

Excerpt 18: From teachers' interview
–Teacher Two - On easier to talk on-line

However, it should be noted that this is at variance with the students' perception of a traditional class. Comparisons with comments from two of the student interviews illustrate this difference:

> "Ye, in class, they just tell us about things………..but we can't really ask them
> any questions".

> "In a normal class the teacher does most of the talking with little time for us to ask questions or discuss things that are important."

Excerpt 19: From student' interview s
–Students 20 and 18 - On easier to talk on-line

5.8.3 Resources: Real concerns about the lack of resources currently available for teaching RSE was a key issue in favour of using the site on a regular basis, for all the teachers. In addition, they saw the tools and resources of the VLE it as providing great opportunities for engaging the class and making the class more "fun and interesting".

> "Ye, I think it is a fabulous resource. For example if a teacher has been running the site and she leaves, well all the information is there for the next teacher"

Excerpt 20: From teachers' interview
–Teacher One - On resources

5.8.4 Private Message Facility: All three teachers perceived this as a great potential asset as they were very aware that some students had problems but "were very reluctant" to communicate with them personally. It should be noted that reluctance to confide in teachers was also consistent with the students' own views as indicated in their interviews. However, if we compare the usage of the private message facility by the students during the study only 11% of students availed of the facility. This is significant in terms of assertions by the literature that on-line anonymity provides a forum where it is possible to be less inhibited and intimidated (Grayson & Schwartz, 2000; Suler, 2004; Joinson, 2001). It may be suggested that a study of on-line interactions with authority figures provides the basis for a further study beyond the scope of this research.

5.8.5 Announcements: The practical advantage of this facility was appreciated as the teachers felt by announcing next week's topic and directing the students to the relevant 'suggested readings' alleviated the need to "constantly repeat this in class."

5.8.6 Upload Current information: This facility was particularly favourable with teacher one (the head of the RSE department) as part of her job is to keep the rest of her staff informed of up-to-date information in this area. She mentioned:

> "Because of the short duration of a normal class, the site has a great potential to provide students with a great amount of resources such as podcasts and videos that teachers cannot show in a classroom because of lack of time."

Excerpt 21: From teachers' interview
–Teacher One - On uploading information

5.8.7 Reflection: Of the three teachers two stated that the fact that they could think about what they wanted to say first before replying to a student was a very important support for themselves as teachers. They mentioned that often in a class situation:

> "you just don't have the time to give the question the "respect and dignity" that is required and sometimes you just " pass it off" and say you will answer it next week, but then you forget."

Excerpt 22: From teachers' interview
–Teacher One - On reflection

5.8.8 More Interactive: Two of the teachers stated that the pattern of interaction and engagement of the students with the medium took them completely by surprise. Teacher three was not at all surprised as she saw it as: "speaking to them in their own language".

5.8.9 More Open Environment: All three teachers reported that such openness rarely happens in a traditional F-T-F class. Their opinion was that this necessary level of openness could only be obtained online. In fact, it was commonly remarked and consistent with the students' own views on this issue that the openness, courage and honesty of the students to reveal so much about themselves was an "eye opener." As teacher two remarked:

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> "I learned more about my class and what they need to know from using the site in one week than I have since September."

Excerpt 23: From teachers' interview
–Teacher Two - On the on-line environment being more open.

5.8.9.1 More Respectful Environment: A surprising theme that emerged from the interviews was the perception of the teachers that the on-line environment was a more respectful one. Their reasons for stating this was based on the level of the interaction between the students on the site. One of the teachers remarked:

> "I cannot believe the level of support …..the maturity….the kindness they have shown toward each other on the site."

Excerpt 24: –Teacher One –
On more respectful environment

An insightful comment from one of the teachers noted that her experience of the site made her think more in depth about her methods of teaching:

> "Now I look at the students differently because I know that a lot of it is bravado or being brash. For instance I was doing STIs the last day and I just mentioned HIV in passing and then I realised that some of them don't even know what it is, even though some of them are oh   ye ye ye ye. So now I explain every term."

Excerpt 25: – Teacher Three
reflecting on the experience.

5.9. Experts in Health Education Areas.

The program was also reviewed by two external experts (unknown to the researcher) in the field of adolescent health. The comments received were overall positive with both

health professionals tending to think in terms of the benefits of the site as a valuable resource for teachers. Interestingly, both made the comment that they thought the site was in line with current thinking within adolescent health care that it was necessary to engage with young people in a type of social networking environment that they participate in naturally and was part of their world. Other comments included:

> "Very feasible but suggest it should be complemented with the traditional class and not as a replacement."
>
> "I think it would involve a lot more work for the teachers if they were not technology minded, or else you would need somebody in the school that would be."
>
> "The links to outside health services are fantastic, because not a lot of young people know what help is out there for them."
>
> "Could there be a risk of legal action if some of the comments on the site turned out to be defamatory?"

**Excerpt 26: From external experts' interview
–Opinions of the on-line environment**.

5.9.1 Summary

This study sought to explore whether VLE could contribute to supporting communication in a RSE class. In this chapter the data collected from the seven data sets was analysed in terms of answering the research questions and it was found that:

- Using a VLE has the potential to support communication in an RSE class
- The elements of the VLE that were examined have the potential to support communication in a Relationship and Sexuality class.

- Students have a positive attitude towards using the VLE as a supplemental communicative tool.
- Teachers have a positive attitude towards using the VLE as a supplemental communicative tool.

In the final chapter the findings will be discussed with respect to the research questions. Limitations of the current research will be addressed and an outline for future research considered.

6. Discussion and Conclusion

6.1 Introduction

This study set out to explore whether the integration of a VLE could support communication within a RSE class. It follows on from a problem identified with communication barriers within a traditional RSE class. This chapter discusses a summary of the findings with respect to the research questions posed.

In relation to the first research question, the results of the study clearly show the expected effects of the programme consistent with previous literature on CMC (Gillies, 2006; Kanuga & Rosenfeld, 2004; Christopherson, 2007). Although a few students indicated they did not like the on-line environment, most students claimed that they participated more online, communicated more, were less inhibited, preferred the on-line class to a traditional class and learned more than they do in the traditional class. Both students and teachers reported high satisfaction with the tools and affordances of the VLE to support communication. Based on the findings several conclusions may be drawn.

First, an important strength of this program is that development was driven by the needs and concerns of the students. Based on the students' own accounts of their reasons for communicating they perceived the VLE as a space to express their concerns about topics that they wanted to know about but felt too inhibited to discuss in a traditional classroom. This supports (Campbell & Aggleton's, 2000) primary argument that to be effective sexuality education must meet the needs and interests of young people as conceptualised by them.

Discussions played a very important role in the engagement of the students with the on-line environment, providing the main means to exchange ideas and offer opinions. However, most students (88%) reported on the absolute significance of anonymity for communicating in a less inhibited way on-line. The reason for this becomes apparent when taking into account the research literature on the effects of anonymity (Joinson,

2001; McKenna & Bargh, 2000). Such a high reportage of less embarrassment (79%) may be attributed to what Suler (2004) refers to as the online disinhibition effect when people don't have to worry how others respond to what they say with gestures such as a frown, a sigh or other signs of disapproval. Another psychological effect that may have been present in the CMC is what has been described as deinviduation or diminished focus on the self (Kiesler et al; 1984). However, it was observed by the researcher that a high level of first person pronoun use and personal disclosure of opinions and feeling were expressed in the on-line dialogue. This suggests that the students experienced high self awareness as opposed to deinviduation. This may have important implications for RSE education as students are more likely to communicate more under these conditions.

For many students the on-line class was a preferred method of learning RSE to the traditional class. More than half (69%) indicated that the on-line class should replace the traditional class. While clearly this is a positive response there are also two other possible explanations for this result. First, there is the possibility that the students' appreciation was based on the novelty factor and therefore gave it increased attention and the second, is that students may simply view technology use as commonplace and a natural tool to use. However, it may also be plausible that the positive reaction to the site was due to its similarity to the type of social networking sites that have become an integral part of their lives.

There was one unexpected outcome that emerged during the study. One male took on what some researchers' (Guiller & Durndell, 2007) term predominately female personally orientated and supportive language. He made many contributions and at the same time gave feedback on other's contributions using very knowledgeable language that positioned him in an expert-like role. Comments from some of the students indicated that this resulted in them contributing a great deal by responding, explaining, disagreeing or agreeing. It is quite possible that Vygotsky's view of ZPD with a more competent peer was highly effective in introducing a communication dynamic in the on-line dialogue.

Considerable previous research has been done on gender differences in on-line participation with some reporting in favour of more female participation (Sierpe, 2000) more male participation (Richardson & French, 2000) and no significant difference in gender participation (Miller & Durndell, 2004). The results of this particular study found that boys participated more than girls. Boys posted 35% more than girls (58% and 42% respectively). While some research has found that stereotypical behaviour in interpersonal communication is accentuated in CMC (Postmes & Spears, 2002), another explanation maybe that individuals' personalities also played a role in their engagement with the on-line environment.

In addition to the effects of the VLE in supporting communication, a further dimension of this study was also to address the elements of the VLE that contributed to communication. In this study, students and teachers responded in a positive way to the communication elements of the VLE developed for this study. They clearly indicated that 24 hour access, anonymity, discussion board, resources and ease of use were key factors that supported communication. In addition, they perceived the presence of the researcher as moderator of any potential 'flaming' content on the site as having a profound effect on their comfort level with the discussion forum.

Regarding the teacher' experience, while the VLE was seen as a valuable communication tool, as some tended to see the VLE as external to their regular educational workload, some had difficulty in fitting the on-line activity into their already busy lives. On reflection, it may be inappropriate to look for a complete shift in the teachers' fundamental approach to teaching and highlights the challenge of creating a truly innovative educational alternative within the context of a conventional school structure. Importantly, it also highlights that a balance is required between advantages for students and gains for the teaching staff in order for this to be fully adopted.

6.2 Limitations

There are several limitations to this study worth noting. The first is the use of a single institution for the data collected. This limitation may reduce the external validity of the results and somewhat limit the generalization of the findings. Second, it was only one relatively small study. Further work needs to be undertaken with a larger sample to provide additional evidence. One question that remains unanswered is whether or not the behavioral benefits observed in CMC discussions will carry over to subsequent face - to - face discussion with the same participants. Further research will need to explore these possibilities.

6.3 Suggestions for Future Research

First, an examination of similar nature should be done with a larger sample and on a wider scale in order to properly validate this initial work. Second, gay and lesbian youth may have been underrepresented in this group and therefore additional research is required to further our understanding of the sexual needs of young people who differ by sexual orientation. Third, further research should show whether the improved communication and participation realized in the programme translates into improved learning outcomes and face-to-face participation. Finally, more studies of this kind need to be conducted so that more can be learnt and discovered about both the potential of the technology and the possible challenges that may be involved in the process

6.4 Contributions of the Study

This study has practical implications for educators seeking to develop new ways of heightening communication skills necessary to relate to adolescents. This study, along with other research can throw light on the level of support required which arises from the difference in what young people perceive to be their needs and concerns and what is currently addressed in RSE. The changing face of social communication has led to the use of computer technology as an important form of personal communication that offers an exciting opportunity to engage with students in a medium that has become central to most. The results of the present study calls for ways to exploit its potential to help reduce

barriers adolescents perceive in a sensitive and difficult subject area. Expanding our awareness of the constantly evolving uses of the Internet among teens is an important step for all stakeholders interested in providing sexual health education to our adolescents. In addition, the result of this study also highlights the importance of adolescent health providers involving students in their own sexual health programs. In addressing their concerns and needs it may be possible to increase the effectiveness of sexual health education.

6.5 Conclusion

The sexual health of young people continues to be a national concern. Communicating with adolescents can be a real challenge especially when trying to discuss the more sensitive areas of their lives. Despite the assumption that young people today are worldly about sexual matters, there is a good deal of lack of knowledge among them. Only with a concerted effort to address their needs will educators of the future provide truly comprehensive sexual health education to young people. The Information Age over the last few decades has offered new possibilities to use technology to create a new educative paradigm, more learner-centred and focused on self-responsibility in the learning process. The lessons learned from this study is that gaining student interest in such a program means targeting their unique needs and developing a program that is relevant to their lives and importantly, uses their own communication medium. As a pilot study the researcher concludes that a computer-tailored sexual health education is likely to be a helpful tool in enabling and encouraging young people to communicate in a RSE class. A continuation of the present work is necessary to realise its full potential.

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APPENDIX 1: Student pre-study questionnaire

Please answer the questions below.

PRE-STUDY STUDENT QUESTIONNAIRE				
GENDER	**MALE:** **FEMALE**:			
DATE OF BIRTH:				

DO YOU KNOW HOW TO USE A COMPUTER KEYBOARD?	**Yes** **No**			
ARE YOU FAMILIAR WITH USING THE INTERNET?	**Yes** **No**			
DO YOU HAVE AN INTERNET PASSWORD IN SCHOOL?	**Yes** **No**			
DO YOU HAVE ACCESS TO THE INTERNET AT HOME?	**Yes** **No**			
DO YOU HAVE AN E-MAIL ADDRESS?	**Yes** **No**			

ADDITIONAL INFORMATION	
HAVE YOU EVER USED SITES SUCH AS BEBO, FACEBOOK TO COMMUNICATE WITH YOUR FRIENDS?	Yes No

APPENDIX 2: Student post-study questionnaire

Please answer the questions below by ticking the relevant box.

POST-STUDY STUDENT QUESTIONNAIRE					
Did you like using the site for relationship and sexuality classes?	**Yes** ▭	**No** ▭	**Sometimes** ▭	**Don't Know** ▭	
Did you use the site outside of the class?	**Yes** ▭	**No** ▭	**Sometimes** ▭		
If not, why not?...					
Did you like communicating with your classmates online?	Yes ▭	No ▭	Sometimes ▭	Don't Know ▭	
Did you think that you 'talked' more in the online class than in the normal class?	Yes ▭	No ▭	Sometimes ▭	Don't Know ▭	Same ▭
Did you feel less embarrassed talking about certain subjects using the site than you would in a normal class?	Yes ▭	No ▭	Sometimes ▭	Don't Know ▭	Same ▭
Did you talk about things that you would not normally talk about in a normal class?	Yes ▭	No ▭	Sometimes ▭	Don't Know ▭	Same ▭
Did you feel more comfortable discussing certain things online than you do in a normal class?	Yes ▭	No ▭	Sometimes ▭	Don't Know ▭	Same ▭
Did you feel that you could be more yourself when you went on-line than you do in a normal class?	Yes ▭	No ▭	Sometimes ▭	Don't Know ▭	Same ▭
Did being anonymous help you to talk more?	Yes ▭	No ▭	Sometimes ▭	Don't Know ▭	Same ▭

Would you prefer to have RSE classes on-line?	Yes ▢	No ▢	Sometimes ▢	Don't Know ▢	Same ▢
ADDITIONAL INFORMATION					
Please indicate by ticking the relevant box if the following helped you to communicate on-line.					
Site available 24 hours	Yes ▢	No ▢	Sometimes ▢	Don't Know ▢	Same ▢
Being Anonymous	Yes ▢	No ▢	Sometimes ▢	Don't Know ▢	Same ▢
Discussion Board	Yes ▢	No ▢	Sometimes ▢	Don't Know ▢	Same ▢
The Chat Room	Yes ▢	No ▢	Sometimes ▢	Don't Know ▢	Same ▢
Private message Facility	Yes ▢	No ▢	Sometimes ▢	Don't Know ▢	Same ▢
Quizzes	Yes ▢	No ▢	Sometimes ▢	Don't Know ▢	Same ▢
Suggested Readings	Yes ▢	No ▢	Sometimes ▢	Don't Know ▢	Same ▢
Did you learn anything new about relationships that you never knew before?	Yes ▢	No ▢	Sometimes ▢	Don't Know ▢	Same ▢
Did you learn anything new about sexual topics that you never knew before?	Yes ▢	No ▢	Sometimes ▢	Don't Know ▢	Same ▢
Did you find the Edit tools helpful?	Yes ▢	No ▢	Sometimes ▢	Don't Know ▢	Same ▢
Did you find the site easy to use?	Yes ▢	No ▢	Sometimes ▢	Don't Know ▢	Same ▢

Any other comments to make:

APPENDIX 3: Completed student post-study questionnaire

Please answer the questions below by ticking the relevant box.

POST-STUDY STUDENT QUESTIONNAIRE				
Did you like using the site for relationship and sexuality classes?	Yes 69%	No 3%	Sometimes 22%	Don't Know 6%
Did you use the site outside of the class?	Yes 64%	No 36%	Sometimes	
If not, why not?..				
Did you like communicating with your classmates online?	Yes 97%	No 3%	Sometimes	Don't Know	
Did you think that you 'talked' more in the online class than in the normal class?	Yes 75%	No 14%	Sometimes	Don't Know	Same 11%
Did you feel less embarrassed talking about certain subjects using the site than you would in a normal class?	Yes 75%	No 8%	Sometimes 10%	Don't Know	Same 7%
Did you talk about things that you would not normally talk about in a normal class?	Yes 79%	No 4%	Sometimes 13%	Don't Know 4%	Same
Did you feel more comfortable discussing certain things online than you do in a normal class?	Yes 86%	No 4%	Sometimes 6%	Don't Know 4%	Same
Did you feel that you could be more yourself when you went on-line than you do in a normal class?	Yes 57%	No 11%	Sometimes 30%	Don't Know 2%	Same
Did being anonymous help you to talk more?	Yes 88%	No 3%	Sometimes 6%	Don't Know	Same 3%
Would you prefer to have RSE classes on-line?	Yes 68%	No 7%	Sometimes 21%	Don't Know 4%	Same

ADDITIONAL INFORMATION					
Please indicate by ticking the relevant box if the following helped you to communicate on-line.					
Site available 24 hours	Yes 64%	No 5%	Sometimes 31%	Don't Know	Same
Being Anonymous	Yes 88%	No 3%	Sometimes 6%	Don't Know	Same 3%
Discussion Board	Yes 79%	No 3%	Sometimes 18%	Don't Know	Same
The Chat Room	Yes	No 97%	Sometimes 3%	Don't Know	Same
Private message Facility	Yes 11%	No 89%	Sometimes	Don't Know	Same
Quizzes	Yes 57%	No 11%	Sometimes 29%	Don't Know 3%	Same
Suggested Readings	Yes 57%	No	Sometimes	Don't Know	Same
Did you learn anything new about relationships that you never knew before?	Yes 50%	No 29%	Sometimes 21%	Don't Know	Same
Did you learn anything new about sexual topics that you never knew before?	Yes 68%	No 18%	Sometimes 14%	Don't Know	Same
Did you find the Edit/ tools helpful?	Yes 29%	No 71%	Sometimes	Don't Know	Same
Did you find the site easy to use?	Yes 86%	No 4%	Sometimes 10%	Don't Know	Same

Any other comments to make:

APPENDIX 4: Example of student's interview (summary). Student 20.

* R=Researcher * S= Student

R. What was your main reason for using the site?

S. It was easier to talk about stuff cos you're not embarrassed.

R. Did you feel comfortable on the site?

S. Ye I felt comfortable talking with my friends on the site. I think it would have been even better if you didn't know them at all. I think you could talk more

R. Did anything make you feel uncomfortable?

S. At the beginning people were putting ridiculous things and messing and sometimes people were putting things that were just not true. Still, even if they were making it up, you are still getting advice from people. One girl I know put up this stuff about this guy she liked and we asked her if it was true and at first she said no and then she told us afterwards that it was true. Most people were really helpful. More people spoke up than they would in class. Like the quieter people in class.

R. In an ordinary RSE class would you feel shy about talking in class?

S. Kind of. In some ways, depending on the stuff. Maybe just for some topics…ye. I just wouldn't say anything, cos everyone else always answers and some people get slagged when they answer things. I see it as three levels. You have people at the top and people from the bottom of popularity. The people at the top can ask questions and pretend they are just asking for a laugh, even though they don't really know the answers. But others could ask and if they weren't popular, then they would get slagged.

R. How did you feel about asking questions and receiving answers from your classmates?

S. I thought it was good, because they know everything that's going on and what you're going through.

R. In an ordinary class would you ask those questions?

S. No, definitely not.

R. Did you feel at ease because you were talking to people who felt the same way as you about things?

S. Sometimes, when people were messing, I thought it would be better if you didn't know them at all or know they were trying to guess who you were.

R. When they were trying to guess who you were, what did you do?

S. I changed my name.

R. So, what was different compared to a traditional class?

S. Being anonymous .Because you were more comfortable because people didn't know who you were. Because sometimes like the lesson are ……… it is embarrassing to ask things face to face. It was nice seeing other people's views. An ordinary class is boring.

R. You went on the site quite a lot from home and also very late at night. Did you find that a good part of using the site?

S. It was much more interesting because you could go on at any time and see what people were saying.

R. Was it important to you that the site was monitored?

S. Yes, cos some people were nasty at the beginning and I didn't like that. I know people can still say stuff to you in person, but I think it kind of helps like. In the end, only people who actually cared about it used it. It was easier to communicate with them.

R. Did you like the teachers being on the site?

S. I didn't mind cos it's not like they can judge you cos they don't know who you are just the numbers.

R. Would you say you learned a lot from the site…that you didn't know before?

S. Ye…but we learn a lot in class too about what we need to know, but we can't really ask them any questions.

R. Did you think there were any advantages over a traditional class?

S The main advantage was that you could say much more. You could just kinda be yourself. You have more confidence. I think that was really good for people who are too shy in class.

R. Overall, which would you prefer – your traditional class or the online class.

S. I think a bit of both really. A balance between the two. Some topics are better like face to face. It depends on the teacher as well cos some of the teachers are like really chatty about it and stuff and you can say anything during the classes and with others you can't. Some just stick to the basics. Probably some of the younger teachers are embarrassed and then that makes it harder for you to ask questions cos you know that they are.

APPENDIX 5: Example of a teacher's interview (summary). Teacher Three

* R=Researcher * T= Teacher

R. Overall, what did you think of the site?

T. I thought it was a very good site. I thought it was excellent and I thought I suppose that it could be used as a starter point for conversations. I thought the students' language was very informal which also meant that MY language could be informal and not feel so much as a teacher standing at the top of the classroom. I felt more like a facilitator of discussion, an easy flowing discussion. It was much more relaxed. I think that I speak in a similar language to the students anyway. My age gap isn't that big. I mean I'm only 26 and I think I can still converse with the students in their language. But I think other teachers might not necessarily be as relaxed as me and because I was relaxed, the students automatically relaxed.

R. Did you think there was a difference in the on-line class and the traditional class in terms of how the students communicated with either yourself or each other?

T. In a face to face discussion I think that some of the students are very awkward and embarrassed and the fact that you have so many different types of students. You have the student who doesn't really care what they say and then you have the very quiet student and they are the types who are going to be completely mortified by it. So I wouldn't know to be careful about the topics that I would broach in the classroom to make sure that everyone was catered for. Everyone was catered for in the online site. You could talk about ANY topic regardless and not necessarily have to be concerned about the cringing student in the corner. The student was able to reply whether they were embarrassed or not through the site.

R. Did you think the students talked more, less or the same as in a traditional class?

T. I found that a lot of students were talking much more so than in a classroom. Normally, only five or six enter into a full on discussion. They are more able to respond and give you feedback.

R. What did you think of the topics they put up on the site?

Topic wise, I thought that students were more honest. They don't know nearly as much as they let on to know. For instance oral sex, they don't have a clue what it is, but through the site they honestly asked that question…….what is it? And it was much more honest and rarely would you get that honesty in a discussion in class. They were able to use words that they wouldn't use in the classroom for fear of embarrassment. I mean some can't even say the word sex without breaking into laughter. I also like the fact that you didn't have to answer a question there and then. Sometimes you just don't know how to answer or if you do, you know that whatever you say will cause messing in the classroom, so I really liked that.

R. Lets go back, why were you so surprised at the honesty?

T. I was very surprised at the honesty and how serious everyone was on the site or that people would start to name names of people in other classrooms. That never happened on the site. They always kept to the topic and discussed what they wanted to. Whereas in a class you can often get carried away where you keep saying "stop messing" or you find yourself having to put in disciplinary actions. You didn't have to do that side. You were just able to relax and facilitate the discussion on the topic either in class or when I got home. That was great for me as a teacher. I was just able to get on with the class discussion on-line.

R. Did you find the site easy to use?

T. I would be very computer literate and did find it easy to use. I am also used to Moodle. Again, maybe for other teachers who aren't as computer literate, maybe that might be a problem. But I have my own computer access. I have my own office, my

own computer. I could go on as many times as I want. Maybe access would be a problem for others. You could just log on when you wanted and I really liked that. I would just log on and see what they were talking about when I was checking my own e-mails. And even though, nobody actually asked me anything in private on the site, it's great that they could if they wanted to.

R. Did you think it helped in terms of your teaching RSE?

T. It's nice to have a plan that you can organise around a computer and if you wanted to alter topics for example, for the following week, you could just say so on the site and get people to read the resources so they know what we are going to discuss next week and they cant say that they have forgotten because it is there for them.

R. Would you like to see the site used in the school for RSE on a regular basis?

T. I'd recommend it for every week. It was a much different way, really fun. It was eye-opening that the kids were so honest and put up some really fun comments. There was some really interesting stuff. Using a computer automatically gets the students involved no matter what you're using on it. They are so used to using a computer. They are on social networking sites all the time. It's their way of communicating, and RSE is different. It is a different topic. It's not like walking into a normal class. It's not like walking in to a maths class or you're not walking into a syllabus or a test orientated class, so it's nice to have a different medium or a different methodology.

APPENDIX 6: Preliminary themes and codes from student and teacher interviews.

Themes	*Source*	*Examples*
Enjoyment	Student questionnaire (anonymous)	"It was brilliant."
Participated More	Teacher interview (teacher three)	"Using a computer automatically y gets the students involved, no matter what you're using on it. Because they are so used to using a computer. They are on social networking sites all the time. It's their way of communicating."
More confident	Student interview (student 18)	"You feel more confident when you post your opinion."
Peers	Student interview (student 3)	"Most people were really helpful. More people spoke up than they would in class."
Honesty	Teacher interview teacher three)	"Eye opening that the kids were so honest and put up some really fun comments."
Being Anonymous	Student interview (student 22)	"I changed my name cos I really wanted to be anonymous cos I could say what I really wanted to say."
Maturity	Teacher interview (teacher two)	"But I am surprised by their maturity. It was kinda of refreshing to see so much maturity how people tried to be nice to each other."
Topics	Student questionnaire (anonymous)	"In the online site you could talk about ANY topic regardless."
Compared to normal class	Student interview (student 18)	"Ordinary class is boring"
Easier to talk	Student interview (student 4)	"Sometimes you can't really talk about it to the teacher."

Learned more	**Student interview (student 20)**	**"Ye…I learned a lot about relationships…like basic things that just help you."**
Different	**Student questionnaire (anonymous))**	**"A new way of learning."**
Less embarrassed	**Student interview (student 4)**	**"It is embarrassing to ask things face to face."**
Difficult to talk	**Student interview (student 3)**	**"Well, it is good to have face to face discussions with the teachers for some topics but then sometimes you just don't want to say it out loud."**
Answering questions	**Teacher interview (teacher one)**	**"I'd imagine it must take a lot of monitoring, so if I were doing it, I would say have a set time when I would say I was coming on. Say 5-7 two evenings a week and then I would answer all their questions."**
Engagement	**Teacher interview (teacher two)**	**"Can't believe how involved the kids got – you have learned more about people in my class in a week than I have in the year."**
Comfortable	**Student interview (student 21)**	**"In an ordinary class everyone can't talk at the same time and you can say much more on the site. Things you just wouldn't say in an ordinary class."**
Not comfortable	**Student interview (student 3)**	**"Ye cos some people were a bit nasty at the beginning and I didn't like that."**
Confidentiality	**Student questionnaire (anonymous)**	**"I didn't like that the password were nearly all the same, so people could pretend to be someone else."**

Advantages over a traditional class	**Student interview (student 20)**	**"The main advantage was that you could say much more. You could just…….kinda be yourself."**
Disadvantages	**Teacher interview (teacher two)**	**"I think I would miss the conversations in class."**
Familiarity	**Student interview (student 20).**	**"I was more comfortable because I knew them."**
Lack of familiarity	**Student interview(student 10)**	**"Sometimes I thought it would be better if you didn't know anybody cos people were trying to guess all the time who other people were."**

APPENDIX 7: Preliminary themes and codes from discussion board

Themes	*Examples*	*Student (anonymous name)*
Friendship	"What should you do if a friend of yours is really annoying you saying that it is so easy to end all this-(life)."	**Student 4**
Help	"How do you use a condom?"	**Student 22**
Response to help	"Wait till ur penis is erect and then very carefully unroll the condom onto ur penis. make sure u don't rip or tear it."	**Student 17**
Health	"Does anybody know if you can get cold sores from kissing sum1 who has one on their mouth?"	**Student 14**
Agreement	"Yeah i agree with 11st after 25. Did you know you can get married under the age 16 with legal consent from your parents."	**Student 20**
Disagreement	"I don't agree. There really isn't a specific right time. I think it is when u both no each other and feel really comfortable with each other that it is just a natural process	**Student 21**
Anonymity	" How do you change your name on this?" "Ah................nobody change their names..pleeze - I kinda imagine u all in my mind by your number☺"	**Student 3** **Student 14**
Personal	"Is it normal for girls to have exhales of gas coming from their vaginas?"	**Student 3**
Slagging	"yeah you immature twat."	**Student 3**
Personal revelations	"I fancy sum1 in 3r whose twin is my friend. she is so nice 2 evry1 and I luv her loads"	**Student 28**

Family	"I only have one older sister and she can be a real pain as I said before. When my mum or dad try to compare me I always ask them " do you really want me to be a nasty person like her"	Student 11
Body Concerns	"Are there exercises to make your penis stronger?"	Student 18
Love	"He sssooo loves you...ever heard of the expression 'LOVE HURTS'?😳	Student 28
Grooming	"If anybody is interested here is where u can get tatoos. Zulu Tattoo, Temple Bar. Classic Ink, Crow st, Temple Bar,Sacred Art, Fownes St, Temple Bar, Wild Eagle tattoo, Talbot st. You have to be over 16 tho."	Student 11
Relationship/Romantic	"What's the best way to break up with someone if u just don't really fancy them anymore and u don't want to hurt their feelings too much?"	Student 17
Asking advice	"How do you cope with exam stress?"	Student 20
Giving advice	"There are lots of ways to cope with the pressure of trying to do well. Being organised and following a study plan will build up your confidence. The night before the exam you should stop studying early in the night. You need time to relax your mind and to get a good nights rest."	Teacher 3
Relationship/Sexual	"Guys love it when the girl makes the first move cause most guys are really shy bout it so go for it.. it'll make him more attracted to you now he knows your interested"	Student 13
Sexual questions	"Is oral sex ok?."	Student 27

Humour	"**Cross dressers transsexuals homosexuals bisexuals heterosexuals and of course sheep.**" 😂😂😂	**Student 20**

APPENDIX 8: Research consent form.

<div style="border:1px solid;">

RESEARCH CONSENT FORM

</div>

Researcher: Marion McGinn

Thank you for agreeing to participate in this study which will take place from January 22nd to February.19th. This form outlines the purposes of the study and provides a description of your involvement and rights as a participant.

The purposes of this project are:

1) To fulfill a course requirement for MSCLO9, Technology and Learning, at Trinity College, Dublin.

2) To gain insight and experience on the topic of whether a VLE can support communication in a Relationship and Sexuality Education class.

The methods to be used to collect information for this study are explained below. From this information, I will write a case report.

The e-learning system Moodle will be used to develop an effective on-line learning community. Data analysis will involve a process of extracting information from the Moodle on-line environment.

You are encouraged to ask any questions at any time about the nature of the study and the methods that I am using. Your suggestions and concerns are important to me; please contact me at any time at the address/phone number listed above.

I will use the information from this study to write a case report. This report will be read by the course supervisor, and optionally, by one other person if you give permission, in order to check on the accuracy of the report. The case report will not be available to any other person to be read without your permission.

I guarantee that the following conditions will be met:

1) Your real name will not be used at any point of information collection, or in the written case report; instead, you and any other person and place names involved in your case will be given pseudonyms that will be used in all verbal and written records and reports.
2) If you grant permission for audio taping, no audio tapes will be used for any purpose other than to do this study, and will not be played for any reason other than

to do this study. At your discretion, these tapes will either be destroyed or returned to you.

3) Your participation in this research is voluntary; you have the right to withdraw at any point of the study, for any reason, and without any prejudice, and the information collected and records and reports written will be turned over to you.

4) Should you request, you will receive a copy of the final report before it is handed in, so that you have the opportunity to suggest changes to the researcher, if necessary.

Do you grant permission to be quoted directly?

Yes _____   No _____

Do you grant permission to be audiotaped?

Yes _____   No _____

I agree to the terms

Respondent _____ Date _____

I agree to the terms:

Researcher _____ Date _____

APPENDIX 9: Code of conduct

Code of Conduct

If everyone in the class is to gain from this project, the whole class needs to set some rules to create a good learning environment. To do this, it will be necessary to draw up a **Code of Conduct**

I…………………………………….Promise to:

Respect other pupils by not referring to them by name on the site

Respect teachers by not referring to them by name on the site.

Respect myself and others by not using *ANY* form of bad language on the site

Respect other pupils by not criticising their ideas

Accept that disagreeing is ok as long as I explain why I disagree with the other's contribution.

Not to make comments of any kind that intimidates, harasses, or bullies anyone

Not to make any comments that are derogatory, demeaning, malicious, defamatory, abusive, offensive or hateful to anyone

Signed…………………………………………………………...

APPENDIX 10: Pilot study results.

PILOT STUDY RESULTS

A pilot study was undertaken 20th November- 11th December, 2008. The participants were five students (two boys and three girls) from the same class that would subsequently take part in the larger project. The purpose was to gain feedback on the students' overall perception of the site. On completion of the study personal interviews were conducted with each of the participants.

The first part of the investigation asked the students about the general design, graphics and layout of the site. Some commented that it was "very dull" and did not appeal to them visually.

The second part asked the students whether they found the site easy to use. While none had any real difficulty, there was a problem in remembering the site name and their password, when they were not in school.

The third part asked the students of their perception of the quizzes and resources available on the site. On this issue there were some suggestions to make the quizzes more interesting, "harder" and more relevant to them.

Regarding the communication elements of the program, the general perception of the students was that the site had great potential to engage their interest. Users commented how it was easier to talk about things more honestly on the site, felt very comfortable and confident that their privacy would be respected. They expressed the opinion that they were particularly motivated to contribute as they were anonymous and could speak freely, because no one knew who they were.

The relatively high usage of the discussion board (60 Posts) indicated that the site was meeting a need of these young people. By way of interest the screenshot below illustrates the level of interest.
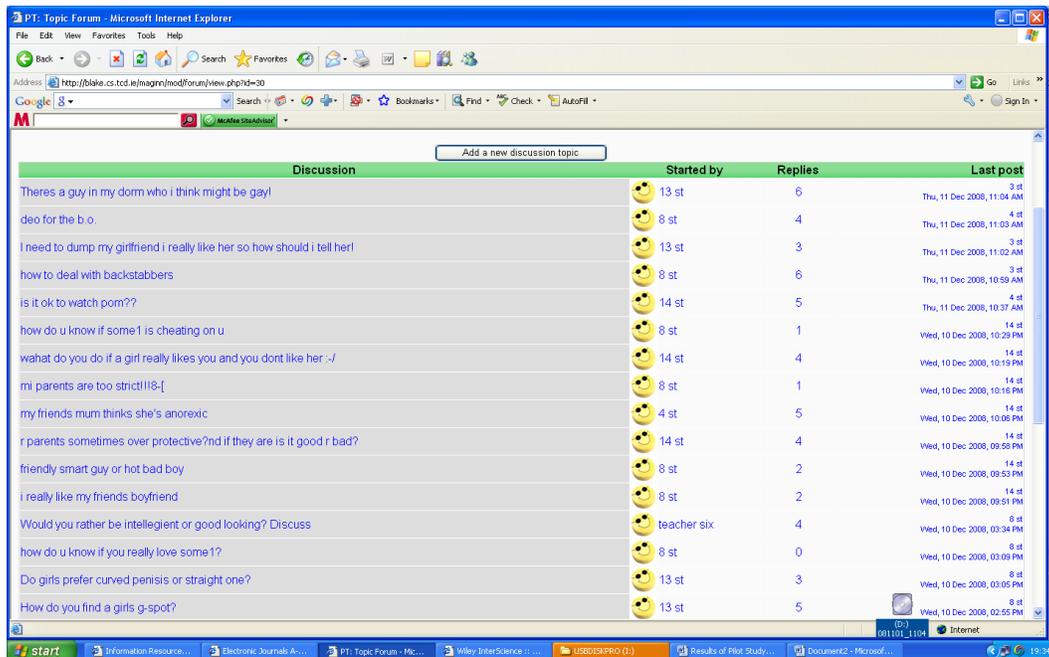
Figure 10 Screenshot of Discussion Forum from pilot study.

The problems identified during this pilot were evaluated and addressed and resolved prior to launching the major project. This included changing the colour scheme, providing individual information to each student on how to use the site and incorporating more visually interesting graphics, quizzes and resources.

Insights arising from this pilot study suggested that the larger study would have the potential to address some of the problems with communication in a RSE class.

APPENDIX 11: Examples of on-line articles.

EXAMPLES OF ON-LINE ARTICLES

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The Risks of Unprotected Sex

For many, the only concern before having sex is the risk of pregnancy. Others believe that only one time is no risk at all. Unfortunately, both premises are wrong. Unsafe sex carries a multitude of risks. These are just a few.

1. Condoms don't give 100% protection against STDs, AIDS, or pregnancy - only abstinence can do that!

2. The strongest reason condoms fail is improper use. It is important to now how to use condoms properly.

3. Some of the STDs that condoms can help protect you from are; HIV/AIDS, herpes simplex virus (HSV), human papiloma virus (HPV), cytomegalovirus (CMV), hepatitis B virus (HBV), Chlamydia trachomatis, and Neisseria gonorrhea.

4. Condom users and/or their partners are less likely to get gonorrhea, ureaplasma infection, pelvic inflammatory disease, and cervical cancer.

5. For STD and HIV/AIDS protection it is essential to use condoms during oral sex.

Cyberbullying

Cyberbullying can involve unwanted text messages, phone video recordings or web posts being used to threaten abuse or harm someone. It's like physical or verbal bullying, just using technology.

Cyberbullying, like all bullying, is difficult on the victim. It can be hard to prove and difficult to get the courage to report it.

If you are experiencing this form of bullying it's vital you don't suffer in silence. Also, if you have witnessed cyberbullying it's important that you take action and address the problem Beat cyberbullying:

Don't reply to the messages.

Save the evidence (photo/email/ video/ web post, etc) as proof.

Tell a trusted adult such as a close relative, a family friend, or teacher.