

**The Emotionally Intelligent Virtual Learning Environment  
(VLE): How it may be constructed from the perspective of  
secondary education**

**A thesis submitted for the degree of  
Doctor of Education**

**By**

**Felix Yamoah Donkor**

**School of Sport and Education  
Brunel University**

**December, 2013**

## **Abstract**

This research study, undertaken in an all girls' secondary school in London, brings to light different approaches by which a Virtual Learning Environment (VLE) may be adopted in order to support the development of students' Emotional Intelligence. It examined the views and experiences of 35 teachers (10 of whom were key informants); 5 teaching assistants; 150 students and 2 VLE Content Developers. Drawing upon data obtained from questionnaires, interviews and focus group discussions, findings of the study indicate that the strategic adoption of VLE tools for use in discussion forums, homework support and feedback, amongst others, can help in boosting secondary school students' self-confidence, self-awareness, self-regulation, empathy and motivation to use VLE resources. Furthermore, the argument is made, that developing students' Emotional Intelligence through the use of online learning tools can lead to the attainment of emotionally intelligent face-to-face classroom environments and hence positive learning outcomes. Based on a process of inductive reasoning, a framework for supporting teachers in developing their students' Emotional Intelligence through VLEs is subsequently proposed and its enablers as well as inhibitors discussed. Finally, whilst emphasising that the use of VLEs to promote Emotional Intelligence is eminently generalisable, the limitations of case study research studies such as this one are acknowledged. Hence, it is recommended that future research in this area is undertaken in different contexts so that a more holistic picture is obtained.

## **Acknowledgements**

I wish to express my profound gratitude to my supervisors Dr Rob Toplis and Dr Sue Collins for their invaluable support, advice and encouragement, which have undoubtedly, helped me to grow as a researcher and to complete this thesis. I would also like to acknowledge my indebtedness to Dr Alexis Taylor for supervising the initial stages of my doctoral studies; Ms Carolyn Cahalane for proof-reading most parts of this thesis; Mr Mark Simons and Ms June Isik for sharing some very useful insights in relation to designing and using VLEs; students and colleagues who have participated in this research study and Dr Deborah Jones (Course Leader, Doctor of Education) for the thought-provoking seminars.

To my wife (Diana), children (Darryl, Darlene, Laurence and Lauren), mum, brothers and friends, I say thanks for bearing with me and for offering the much needed motivation and encouragement to complete this study. Finally and most importantly, I thank God for making this possible.

*Dedicated to the memory of my father, E.B Donkor and to all those who aspire to greatness  
but have been hindered by wars, poverty, ethnicity or background.*

# Table of Contents

Abstract .....	i
Acknowledgements.....	ii
Table of Contents.....	iv
List of tables.....	ix
List of figures.....	ix
Publications.....	xi
Chapter 1.....	1
Background to thesis.....	1
1.1    Introduction .....	1
1.1.1    The theoretical position of VLEs in education .....	5
1.2    Motivation for this research study.....	5
1.3    Background to this thesis .....	6
1.4    Context.....	8
1.5    Justification of research study .....	10
1.6    My expectations for the research study.....	11
1.7    Structure of thesis.....	12
Chapter 2.....	13
Literature Review.....	13
2.1    Introduction .....	13
2.2    The notion of intelligence .....	14
2.2.1    Intelligence quotient versus multiple intelligences.....	14
2.2.2    Emotional Intelligence .....	18
2.3    Emotional Intelligence and its relationship with pedagogy .....	20
2.3.1    Developing personal competence for the classroom .....	23

2.3.2	Emotionally balanced classrooms .....	26
2.4	Theories of learning .....	27
2.5	Using VLEs to support Emotional Intelligence .....	32
2.5.1	Empathy in virtual worlds .....	34
2.5.2	Supporting Emotional Intelligence by using online forums .....	37
2.5.3	Presence within virtual environments .....	41
2.5.4	Communication within VLEs.....	44
2.6	Summary of chapter .....	46
	Chapter 3.....	49
Methodology .....		49
3.1	Introduction .....	49
3.2	Philosophical issues .....	50
3.3	My research position .....	53
3.4	Chosen strategy – case study.....	55
3.4.1	Research questions .....	59
3.4.2	Research propositions.....	60
3.4.3	Unit of analysis .....	61
3.4.4	Linking data to propositions and criteria for interpreting findings.....	62
3.5	Selection of research sample .....	63
3.6	Choice of data collection methods .....	68
3.6.1	Data collection method 1 – Questionnaires.....	70
3.6.2	Data collection method 2 – Interviews .....	71
3.6.3	Data collection method 3 – Focus group.....	74
3.7	Ethical considerations .....	76
3.8	Ensuring validity and reliability .....	78
3.8.1	Validity.....	79
3.8.2	Reliability.....	81

3.9 Chapter summary .....	84
Chapter 4.....	85
Data analysis .....	85
4.1 Introduction .....	85
4.2 Strategies for analysing the data collected .....	86
4.2.1 Analysing the interviews .....	86
4.2.2 Analysing the focus group discussions.....	89
4.2.3 Analysing the questionnaires.....	90
4.3 Findings in relation to videos .....	94
4.4 Findings in relation to VLE forums .....	104
4.5 Findings in relation to VLE tests.....	114
4.6 Findings in relation to using feedback .....	117
4.7 Reflective journals.....	121
4.8 Discussion of emerging themes.....	122
4.8.1 Self-confidence and self-esteem can be enhanced by VLE resources .....	122
4.8.2 Self-awareness and self-regulation competencies can be enhanced by VLE resources..	124
4.8.3 VLEs can help students to understand/support others .....	126
4.8.4 VLEs can support positive interpersonal relationships .....	127
4.8.5 Time.....	129
4.9 Chapter summary .....	130
Chapter 5.....	132
Discussions and conclusions.....	132
5.1 Introduction .....	132
5.2 Discussions in relation to research questions .....	133
5.2.1 How does the use of VLE tools impact upon students' Emotional Intelligence and classroom ambience? .....	133
5.2.2 How should we work within the VLE so as to develop students' Emotional Intelligence? .....	136

5.2.3	What should be the content of the VLE? .....	138
5.2.4	How should a VLE intended for secondary school students be designed in order for it to support Emotional Intelligence? .....	141
5.3	Key findings .....	144
5.4	A framework for using VLEs to support Emotional Intelligence .....	145
5.4.1	Explaining the framework .....	146
5.4.2	What are the enablers and inhibitors? .....	149
5.5	Strengths and limitations of the current research .....	151
5.6	Recommendations for future research.....	153
5.7	Conclusion.....	154
5.8	Personal reflection.....	157
References.....		159
Appendix 1 – Request for participation .....		175
	Letter to Head Teacher .....	176
	Letter to colleagues.....	177
	Information sheet for students.....	179
	Approval of ethics application .....	181
Appendix 2 .....		183
	Pro forma for teachers to record observation.....	183
Appendix 3 .....		187
	Evidence of using videos .....	188
	Issues relating to the use of videos.....	196
Appendix 4 .....		197
	Example of staff questionnaire response .....	198
	Summary of IFS questionnaire responses.....	201
	Examples of interview transcripts.....	210
	Example of use of feedback (2 stars and a wish) .....	223



Appendix 5 .....	224
An example of the responses obtained from the student questionnaire .....	224
Example of focus group report .....	229
Appendix 6 .....	231
Screen-shots of students' discussions in VLE library .....	231
Appendix 7 .....	233
Staff opinions about VLE appearance .....	234

## List of tables

Table 1: Showing key terms referred to in Chapters 3 and 4.....	50
Table 2: Showing some information about teachers who were interviewed .....	64
Table 3: Showing the number of students in each year group .....	66
Table 4: Showing the number of students from each year group to be used in sample.....	66
Table 5: Showing the research sample (students) stratified year group and ethnicity.....	67
Table 6: Showing how validation was ensured in this study .....	80
Table 7: Case study protocol - adapted from Yin (2009) .....	83
Table 8: Summary of responses obtained from the rating scale questions .....	92
Table 9: Table of <i>enablers</i> and <i>inhibitors</i> .....	151

## List of figures

Fig 1: Conceptualisation of Emotional Intelligence .....	19
Fig 2: Conceptual framework for this research.....	48
Fig 3: Students' opinions about videos as used in the VLE .....	99
Fig 4: Showing an example of a video resource in which a maths teacher is featured .....	100
Fig 5: Showing how a maths teacher used a video resource to provide model answers for a homework task .....	101
Fig 6: Showing a student's opinion about a piece of music as posted in a forum .....	106
Fig 7: Showing another student's opinion about the same piece of music as posted in the forum.....	106
Fig 8: Showing how forums are used in maths to encourage discussion.....	107
Fig 9: Showing how forums are used in maths.....	108
Fig 10: A diagrammatic representation of students' opinions about impacts of VLE forums .....	113
Fig 11: Students' opinions about the impact of feedback .....	120

Fig 12: A classroom within the VLE ..... 143

Fig 13: Framework for developing secondary school students' Emotional Intelligence using VLEs ..... 146

## **Publications**

Donkor, F., (2013), Using VLEs to Support Emotional Intelligence: A Secondary School Perspective, *Proceedings of 10<sup>th</sup> IFIP World Conference on Computers in Education*, (Ed. Reynolds, N. and Webb, M.), July 2-5, Torun, Poland, pp. 36-44.

Donkor, F., (2014), Teachers' Perceptions of how VLEs may be used to Support Emotional Intelligence, *accepted for publication in Proceedings of Ireland International Conference on Education*, 28-30 April, Dublin, Ireland.

# Chapter 1

## Background to thesis

### 1.1 Introduction

This thesis builds upon an Institution Focussed Study (IFS) which examined teachers' views about Emotional Intelligence in relation to learning and teaching (Donkor, 2013). That research study also examined the nature of my school's Virtual Learning Environment (VLE), its extent of use and ways by which Emotional Intelligence may be adapted within it. Having identified from the IFS (Donkor, 2013) some VLE tools that can be depended upon to help develop students' Emotional Intelligence, this thesis aims to specifically examine the impacts of using the identified VLE tools on students' Emotional Intelligence in order to generate causal links where possible. Ultimately, the thesis seeks to highlight some strategies for adopting and using VLEs in secondary schools. This way, it is hoped that VLEs will be seen as useful tools for supporting the development of students' Emotional Intelligence.

Since the launch of microcomputers into schools in England in the 1980s, Wellington (2005) has observed, that there has been continuous introduction of 'new' Information and Communication Technology (ICT) initiatives into school education through a 'series of heavily funded government initiatives' (p. 25). Whereas some of these so-called new technologies like interactive whiteboards, digital recorders and voting systems, succeeded to an extent, in reconfiguring classroom practice in some schools (Crook *et al.*, 2010), Wellington (2005) argues, that in most instances 'money has been spent on ICT on the basis

of faith or blind belief in its vocational (and sometimes pedagogical) value, rather than on any basis of evidence' (p. 28).

Amongst the technologies gaining prominence in schools nowadays is the VLE. According to the Joint Information Systems Committee (JISC), the term VLE is used to describe 'online interactions of various kinds which take place between learners and tutors' (2009, p. 1). Nwabude (2010) adds that VLEs have been developed to enable knowledge management by promoting the sharing of information and the provision of interactive and personalised learning experiences to students. Furthermore, Brown (2010) has remarked, that VLEs can be depended upon to flexibly deliver learning materials, activities, and support to students across an institution 'using a standardised set of tools and interface design that could be centrally managed, resourced and monitored' (p. 2).

The fundamental features of a VLE according to McFarlane (2011) include tools for:

... curriculum mapping (for breaking curriculum into sections that can be assigned and assessed), student tracking, online support for both teacher and student, electronic communication (e-mail, threaded discussions, chat, Web publishing), and Internet links to outside curriculum resources (p. 86).

Potentially, the benefits of adopting VLEs in schools also include: opportunities for 24-hour access to curriculum resources and support (John and Wheeler, 2008); the possibility of rich learner engagement resulting from opportunities to explore, construct and manipulate virtual objects (Dalgarno and Lee, 2010); new methods for learning and teaching (Mason, 2011), enhanced communication between teachers, students and parents, as well as new opportunities for responding to individual differences and needs (Crook *et al.*, 2010).

Brown (2010) has observed, nevertheless, that the fact that institutions are installing VLEs does not necessarily mean that VLEs are being used extensively, or that they are being used to do anything different. According to Wellington (2005), this is because teachers' attitudes

to ICT have always varied – ‘some have embraced it with missionary zeal’ whereas ‘others have delighted in being cynical’ (p. 34). Tyack and Tobin (1994) have also noted, that innovations that seek to challenge the ‘grammar of schooling’ (p. 476), in other words, institutionalised practices in schools, have often not lasted for long. According to them, this is because the ‘grammar of schooling’ has encouraged familiar patterns of work, which in turn, have enabled ‘teachers to discharge their duties in a predictable fashion and to cope with the everyday tasks that school boards, principals, and parents expect’ (p. 476). Therefore, the introduction of a ‘new’ technology such as a VLE can be very easily perceived as an unwelcome alteration to the familiar routines and behaviour associated with teachers’ roles. This, according to Tyack and Tobin (1994) can lead to ‘considerable cognitive and emotional strain for teachers’ (p. 478) and hence their unwillingness to embrace such innovations.

Different reasons can be ascribed to the attitudes teachers may have towards the introduction of ‘new’ technologies to their practices. This could range from the lack of confidence about using the technology, to the need to complete strict curriculum requirements within specified times, bearing in mind the targets they and their students are expected to achieve. It can be argued therefore, that the majority of teachers will opt for what they deem as the trusted way of delivering the curriculum. And that for some teachers may not include learning how to use a ‘new’ technology. Especially, when there is little or no evidence that the so-called ‘new’ technology has obvious advantages over existing practices.

One thing is however certain: VLE technologies have come to stay although their nature and scope may change over time. Therefore, it is important that some of the characteristics underpinning excellent classroom practices are carefully examined in relation to how they may be adapted within such online learning environments.

One of such characteristics is Emotional Intelligence. According to Salovey and Mayer (1990), Emotional Intelligence refers to people’s ability to perceive accurately, appraise and express emotions. Zwozdiak-Myers (2012), has observed that Emotional Intelligence is ‘a

relatively new and under-researched construct within the field of education, which has important implications in the context of teaching and learning' (p. 9). Emotional Intelligence influences our motivation, resilience and ability to work effectively with others on learning tasks by helping us to keep in check those negative emotions that can distract the learning process (Goleman, 1996). Furthermore, Goleman (1996) argues, that Emotional Intelligence transcends having intellectual ability as it includes personal qualities such as initiative, empathy, adaptability and persuasiveness. Hence, he posits that being emotionally intelligent is crucial for our cognitive development and also for success in life.

On a similar note, Gipps and MacGilchrist (1999) assert, that Emotional Intelligence is necessary for achieving positive learning outcomes. This is because, when teachers and students are emotionally intelligent, they are able to develop positive learning environments within which happiness, confidence and collegiality thrives.

In traditional face-to-face classroom environments, emotionally intelligent teachers have often been able to gain access to their students' intentions through cues such as the nodding of head, a twitch in the eye or the tremor of hand (Andresen, 2009; Dodds *et al.*, 2011). Within such environments, teachers are also able to recognise the emotional states of their students through facial expressions and other body language, and therefore are able to intuitively adapt classroom discussions and lessons to learners' needs. Sadly, it has been noted by researchers like Kanuka and Nocente (2003) that such cues to learners' intent are not readily available when learning takes place within VLEs. As a result, learning within virtual environments can be unfriendly or even frustrating. In effect, students can become disengaged from what they are supposed to learn. Achievement is thus likely to fall, and so will self-esteem and the motivation to take control of one's own learning. For these reasons and others discussed in the subsequent sections of this chapter, I am of the opinion that studies into VLEs and how they may be used to support Emotional Intelligence are needed for successful 21<sup>st</sup> century teaching and learning.



### **1.1.1 The theoretical position of VLEs in education**

By its nature and the way it is often used in schools, the adoption of VLEs support the argument for learning within social contexts and suggests a constructivist approach to learning. A constructivist pedagogical approach assumes that the learning process should be focused on learning and teaching, and that learning activities must focus on what the learner *actually* does (Biggs and Tang, 1999). This means that ‘a constructivist learning environment’ (Brown and King, 2000, p. 246), like a successful VLE, is one in which teachers are able to create opportunities for their students to construct knowledge by supporting and learning from each other. As a result of the collaborative tendencies associated with VLEs and the rich context that they can offer to learners for the construction of knowledge and meaning, the current study positions VLEs within the constructivist paradigm. Assumptions underpinning this paradigm are discussed in Chapter 3.

## **1.2 Motivation for this research study**

Primarily, my motivation for undertaking this research study has been derived from the feedback that I have received from inspectors, colleagues, and my students over the last 10 years. Referring to some lesson observation feedback for example, I noticed that quite often, apart from commenting on teaching and learning, planning, questioning and assessment of learning, observers have also made remarks about classroom ambience. In particular, they have often made reference to relationships with and amongst my students. One observer for example, noted that ‘the classroom atmosphere exuded calmness and good control’. He also commented on the ‘effective language and manner by the teacher’. Other observers have stated that ‘you used humour to help build relationships with students’; ‘sense of humour apparent, appreciated well by students’; ‘good eye contact – engaged with pupils’; ‘calm, workman-like, happy, busy’; ‘stern, happy, puzzled’ emotions shown.

Reflecting upon such feedback brought to my attention, the crucial role that emotions can play in the learning process. Therefore, I continuously strive to encourage positive emotions amongst my students through the use of humour, support, encouragement and group work. With the widespread adoption of VLEs in schools in recent years, I began to wonder about how the Emotional Intelligence competencies which I believe underpin my lessons and those of effective classroom practitioners may be developed within a VLE. This is because ordinarily, communications within such environments are text based. In most VLEs (at least those that I have seen used in schools) learning materials have been presented as Microsoft Word documents, PowerPoint slides or Adobe files. As a result, the emotional and visual experiences which compliment learning are often lost. My initial proposition for this research study therefore, was to examine how a VLE may be designed in order for it to be intuitive to learners' emotional and academic needs. Just like a classroom teacher will draw upon facial expressions and body language to intervene in the learning process, I wanted to examine how a VLE should be designed in order for it to support students in a similar way.

Thinking about my initial propositions for the study, it became apparent to me that I did not possess the technical ability or the funding to embark upon such a study. As an alternative therefore, I decided to examine ways by which we (educators and learners) can work 'emotionally intelligently' within existing VLEs and also, how VLEs may be depended upon to support and develop students' Emotional Intelligence.

### **1.3 Background to this thesis**

As mentioned in the introduction, this thesis builds upon an IFS (Donkor, 2013) which examined teachers' views about Emotional Intelligence in relation to learning and teaching. The questions explored in the IFS (Donkor, 2013) included:

- Who is an emotionally intelligent teacher?
- What qualities underpin their teaching?
- What is the nature of their classroom environment?

- Which of the qualities that underpin their practices can be transferred into a Virtual Learning Environment (VLE)? And in what ways can this be achieved?
- In what ways can the school's VLE be adapted in order for it to encourage Emotional Intelligence and consequently improve upon students' motivation and achievement?

The findings from the IFS (Donkor, 2013) indicated that teachers in the school have a good understanding of the term Emotional Intelligence. The argument that understanding and using emotions are necessary for the achievement of emotionally stable learning environments also became apparent. Amongst the many reasons teachers gave in support of these were that Emotional Intelligence:

- Can be depended upon to create an environment in which students feel secure enough to make good progress and want to learn
- Engenders empathy, comfort and trust so that everyone is able to learn in a positive environment and do their best
- Will enable us to deal with events in our lives that make us unhappy or angry so that these emotions do not cloud our judgement or ability to take part in teaching and learning

With regards to how VLEs may be used in order to support Emotional Intelligence, findings from the IFS (Donkor, 2013) revealed that the following strategies and/or tools may be appropriate: use of emoticons, forums, positive quotes, communication tools, and videos to show body language when learning. Referring to the use of forums in particular, one respondent stated that:

A well monitored VLE forum can provide a good 'practice' for users in relation to staying on-topic in relation to a particular discussion, and realise that their own enthusiasm for a given idea or thought or belief etc does not mean that a) they can express it regardless of the current conversation and b) impose it on others. This could help them better recognise when they DO such behaviour and can help them better self-monitor in future [sic].

Having identified from the IFS (Donkor, 2013) some strategies which when adopted in a VLE, can help in developing students' Emotional Intelligence, this research study attempted to build upon those findings by examining specifically, the impacts of each of the identified tools/strategies on Emotional Intelligence within the VLE and also, during face-to-face classroom interactions. Thus the study involved an examination of the use of the following VLE tools in relation to how they can impact upon students' Emotional Intelligence: Forums, Tests, Videos and tools for leaving positive feedback.

The overarching aim of the research study therefore, was to examine ways by which a VLE intended for use by secondary school students may be adapted and used in order to support Emotional Intelligence.

## **1.4 Context**

The current research was undertaken at my work place – an all girls' school situated in London. The school admits students of all abilities between the ages of 11 – 16 although priority is given to children from Catholic families. It has a student population of about 600, has 35 teachers and 5 teaching assistants (TAs). Compared with the national average of 28.2%, a higher proportion of students (31.8%) attending the school receive free school meals (FSM). This suggests that more of its students are from poorer families despite the fact that the school is situated in a middle class setting. English is not the first language for 33.9% of its students (national average is 15.9%) even though Raiseonline statistics indicate that students in the school achieve significantly better than the national average. The school has been using the 'Fronter' VLE for the last four years.

The school's VLE is gradually gaining popularity amongst both staff and students. From September 2012 to February 2013 the number of 'room visits' within the VLE averaged 14,546 for students and 1,296 for staff. In November 2012, when students were preparing for

their end of term assessments, the number of 'room visits' was 21,329 for students and 2,174 for staff. This shows a remarkable improvement in usage, if compared with the statistics for the first year of the VLE's adoption (September 2009 to August, 2010) which showed the average number of 'room visits' as 600 for students and 240 for staff.

In spite of these observations, the use of the VLE cannot be deemed widespread. This is because the end of year audit for 2011/12 showed that only 12 teachers used the technology with their classes on a regular basis (weekly with most classes they teach). And this was despite the fact that all members of staff had been offered training on how the technology may be used as well as information about the potential benefits of adopting the VLE. At the moment, it appears that the teachers using the technology mainly use it as a medium to post information for their students, as a tool to design tests for students or for homework. Hence, other benefits of using VLEs have not been exploited.

As a teacher with the responsibility of developing and promoting the adoption of the school's VLE, I am of the opinion that the successful adoption and hence use of the VLE within the school will depend on factors such as: educating users about the potential benefits and limitations associated with using the VLE; providing regular training sessions for users – particularly teachers and students; sharing good practice through a focus group and adopting effective evaluation and monitoring strategies in order to assess who is using the tools and in what ways the tools are being used.

In addition to these, I am of the opinion that the quality of the learning that takes place within the VLE will ultimately be underpinned by our ability to create an emotionally intelligent environment within the VLE. For, as Balaam et al. (2010) suggests:

An emotional experience such as enjoyment of learning can direct a student's full attention to a learning task, enhance a student's academic motivation, and enable the student to adopt flexible learning strategies such as elaboration and critical evaluation (p. 1623).

Moreover, I am of the opinion that the benefits of creating emotionally intelligent atmospheres within our VLE will extend to face-to-face classroom interactions. This is because we can then expect students to demonstrate confidence, self-awareness, self-regulation, empathy, and relationship management skills in online situations as well as within traditional classroom settings.

## **1.5 Justification of research study**

In Chapter 2 (literature review) the point is made that research studies into Emotional Intelligence continues to grow since the popularisation of the concept by Goleman (1996). Similarly, the literature review indicates that several studies have been undertaken in relation to the adoption and use of VLEs in education. Sadly, the extant literature indicates that whereas most research studies into VLEs have been undertaken within the further and higher education sectors, very few of such studies have been carried out from the perspective of secondary school education or below (Oliver *et al.*, 2009).

It is also apparent from the literature review that research studies examining how VLEs may be used to support Emotional Intelligence are generally lacking. This is in spite of the fact that VLEs are being used increasingly in classrooms where more traditional face-to-face teaching and learning typically occurred, and where arguably there are many more socio-cultural, affective, and group supportive opportunities. Consequently, I deem this research study relevant, as it addresses an emerging area of need, namely, Emotional Intelligence and how it may be supported by VLEs.

Feedback I have obtained from colleagues and educational researchers with whom I have discussed the propositions of the study, also suggest that the current research addresses a ‘worthy research topic’. This was particularly highlighted by three anonymous reviewers who reviewed a manuscript based on this research study which I had sent to a peer reviewed

journal. Even though the editors of the journal indicated that I had to make some important amendments, one reviewer stated:

This manuscript addresses a worthy research topic given the increasing use of VLEs in classrooms and the likelihood that digital interfaces may well be limited in the qualities of interpersonal relations and group social dynamics compared to those that take place in face-to-face learning environments. While social network approaches to digital learning environments, that encourage interactive learning and sharing among students, can contribute to improving the social context of digital-based learning, challenges still arise in enabling a more complete interpersonal and socially supportive ambience in these digital-based systems. Moreover, some insights about how to more effectively combine VLEs and face-to-face learning environments to gain the maximum benefits of both is a useful topic for exploration [sic].

Another anonymous reviewer commented on the relevance of the current study by noting that:

Now that we are using VLEs to teach students and we do understand the importance of Emotional Intelligence, it is imperative and critical to study its efficacy and productivity.

The third reviewer added that ‘the use of VLEs to foster Emotional Intelligence could potentially be important to teachers and students’. Therefore he (or she) added that increasing attention to aspects such as Emotional Intelligence is a worthy topic in VLE design and implementation. Finally and perhaps most importantly, the arguments presented in the current research are based on the views of those who are directly involved in the teaching and learning process. Hence the findings of the research study and how the study impacts on future adoptions and use of VLEs can all be said to be driven by pedagogy as opposed to technology.

## **1.6 My expectations for the research study**

Primarily, it is expected that this research study will help in bringing to light the important roles that VLEs can play in helping to develop the Emotional Intelligence of secondary

school students. In effect, it is expected that the notion of Emotional Intelligence (perceived to be more important than Intelligence Quotient – Chapter 2) will become more popularised in secondary schools' classrooms. It is also expected that as a result of this research study, the success factor of using VLEs in learning will be highlighted in education, thereby encouraging schools to draw parallels with industry.

By undertaking this research study from a secondary school perspective, it is my expectation that the study will help in bridging the gap in the extant literature, as currently, most research studies into VLEs have been undertaken in the further or higher education sectors. Finally it is expected that by undertaking the research study in my workplace, I will succeed in empowering myself, colleagues and students in the use of the school's VLE and consequently facilitate its adoption and effective use.

## **1.7 Structure of thesis**

This thesis comprises five chapters, each providing an understanding and analysis of issues deemed necessary for the research study. In this first chapter, an introduction to the research study has been provided. This included an outline of the study's background, motivation and the justification for it, as well as its context. Chapter 2 discusses the relevant literature in order to provide a theoretical background and context within which the current research may be situated. In Chapter 3, the research methodology adopted is introduced and justified. That chapter also discusses some of the different strategies used by educational researchers and examines the philosophical issues underpinning educational research. In addition, it discusses the methods of data collection used in the research study, addresses ethical considerations and provides a research protocol which can be followed in order to ascertain the reliability, credibility and validity of the research process and its findings. Chapter 4 provides the analyses of the data obtained and a discussion of the findings. Finally, Chapter 5 outlines the conclusions of the study and identifies the implications of the current research for future research.



## Chapter 2

### Literature Review

#### 2.1 Introduction

The previous chapter provided the background to this research study. It explained my personal interest and motivation for embarking on this study. That chapter also outlined the aims of the study, its background, context, as well as my expectations of the research study. In addition, it set the scene on the need for examining Emotional Intelligence in relation to the adoption and use of Virtual Learning Environments (VLEs) within the context of secondary education.

In this chapter, a theoretical background and context within which the current research study may be situated is presented. The chapter sets out to review some of the previous research studies that have been undertaken within the field of Emotional Intelligence and VLEs in order to help identify some key areas for further investigation. Also examined in this chapter, are the theoretical perspectives of some researchers such as Gardner, Vygotsky, and Goleman and how their perspectives have helped to guide this research study. The chapter is consequently, divided into four main sections covering the following key issues:

- The notion of intelligence
- Emotional Intelligence and its relationship to pedagogy
- Theories of learning

## 2.2 The notion of intelligence

Intelligence, according to Gardner (2011, p. xvi) is the ‘computing power of an individual’s musical, spatial or interpersonal capacity’. It is described in the Oxford dictionary of psychology as a cognitive ability, and also as an individual’s ability ‘to act purposefully, to think rationally, and to deal effectively with his environment’ (Colman 2006, p. 438). For several years, peoples’ levels of intelligence have been judged based on a measure of their Intelligence Quotient – IQ (Child, 2007). IQ is calculated by dividing a person’s mental age (MA) by his/her chronological age (CA) and then multiplying the ratio by 100 (Colman, 2006). In other words,  $IQ = (MA/CA) \times 100$ .

IQ was perceived by many as that single ability that determines a person’s general capabilities in life. It was seen as setting a limit to what an individual can achieve in school as well as in other intellectual fields (Allman, 1994; Cowley, 1994; Time, 1977). The early 1900s were thus characterised by efforts to create standardised IQ tests which were deemed valid and reliable for measuring intelligence (Cowley, 1994). Amongst the early psychologists to develop intelligence tests was Alfred Binet, who together with his colleague Theodore Simon devised the first tests of intelligence in order to place children at their appropriate grade level. An article in the Time (1977) claimed that by the end of that year, there were close to 200 IQ tests in use and that the tests were primarily used to gauge four abilities: verbal, numerical skills, spatial relations and reasoning.

### 2.2.1 Intelligence quotient versus multiple intelligences

In recent years, traditional perception of intelligence based on IQ testing has been deemed by many researchers as being narrow (Gardner, 1983; Stanford, 2003; Child, 2007). The idea

that intelligence is a single entity, that results from a single factor, and which can be measured by simply taking IQ tests has thus been questioned. Sternberg (2004) for example, has suggested that ‘intelligence cannot be fully or even meaningfully understood outside its cultural context’ (p. 325). Consequently, he adds that intelligence may be conceived in different ways in different cultures. And that behaviour that may be deemed smart in one cultural context, may, in other cultural contexts, be deemed stupid. For, people in different cultures have different embedded theories of intelligence, some of which may be different from an investigator’s view of the world (Sternberg, 2004; Bruner, 1997).

Gardner (1983), who developed the theory of multiple intelligences, has also argued that there is no need to associate intelligence only with the linguistic and logical skills assessed by IQ tests. Consequently, Gardner (1983) proposed seven independent intelligences, each representing a relatively autonomous set of problem solving abilities. These are:

- Linguistic intelligence – the ability to learn languages, and the capacity to effectively use language to achieve goals
- Logical-mathematical intelligence – the ability to analyse problems logically, to recognise patterns and to work with abstract concepts. Individuals who possess such intelligence have the capability to carry out mathematical operations, and investigate issues scientifically
- Spatial intelligence – the ability to think in three dimensions. It includes mental imagery, spatial reasoning, image manipulation, graphic and artistic skills
- Bodily-kinaesthetic intelligence – involves the ability to use one’s whole body or parts of the body to solve problems
- Musical intelligence – involves skills in the performance, composition, and appreciation of musical patterns
- Interpersonal intelligence – this intelligence allows people to work effectively with others. It is concerned with the capacity to understand the intentions, motivations and desires of other people

- Intrapersonal intelligence – refers to the ability to understand oneself, thoughts and feelings, and being able to use that information in planning and directing one’s life

Gardner (1983) argued that these seven intelligences rarely operate independently. Rather he asserts that they are used at the same time, and that, they complement each other as people develop skills or solve problems. Furthermore, Gardner (1993, p. xxiii) argues that:

The seven kinds of intelligence would allow seven ways to teach, rather than one. And powerful constraints that exist in the mind can be mobilised to introduce a particular concept in a way that children are most likely to learn it and least likely to distort it.

Subsequent research led to Gardner (1999) proposing two more intelligences – naturalist intelligence and existential intelligence. According to Gardner (1999), naturalist intelligence enables human beings to recognise, categorise and draw upon certain features of the environment. In other words, this intelligence is involved with the ability to understand the natural world and to work successfully within it. Although he built a case for the inclusion of naturalistic intelligence into his original theory of multiple intelligences, Gardner (1999) argues that empirical evidence is sparse for existential intelligence – which involves the ability to conceptualise or tackle deeper questions about human existence – to be included. Thus, the theory of multiple intelligences comprises 8 intelligences although there is the possibility of a ninth.

The idea that intelligence is not necessarily tied to just IQ can be seen as liberating. For, ‘children do not fit a single prototype’; each child has different predispositions in the eight intelligences (Stanford, 2003, p. 80). Besides, our understanding of concepts is likely to become tenuous if we are restricted to a single mode of conceptualizing and presentation (Gardner, 2011). Hence, Gardner (2011) posits that educators who are convinced of the relevance of the multiple intelligence theory must ‘individualise’ and ‘pluralise’ (p. xvi). By individualising, Gardner (2011, p. xvi) asserts that, educators ‘should know as much as

possible about the intelligences profile of each student for whom they have responsibility'. On the other hand, he adds that by pluralising, educators need to decide on which topics, concepts, or ideas are of greatest importance, and consequently, present them in different ways. Thus, teachers should plan for and deliver their lessons in a style, which encompasses most, if not all of the intelligences. This way, more students are reached and students are offered opportunities to use their multiple intelligences in several ways so as to deepen their understanding of concepts (Gardner, 2011; Stanford, 2003). It is then, that learning will be optimised for the whole class and all students more likely to be successful (Nolen, 2003).

Undoubtedly, the theory of multiple intelligences has become influential in school reform across the world (White, 2008). The theory has been instrumental for reducing the low self-esteem of those students who see themselves as stupid, and it underpins the idea that pupils have preferred learning styles and that some make better progress if they involve other strengths in their learning rather than rely solely on their language ability (White, 2008). Consequently, Stanford (2003) has noted that unsuccessful and/or unmotivated students can experience academic growth when exposed to multifaceted interventions and techniques that are based on the theory of multiple intelligences.

In spite of the benefits attributed to the theory of multiple intelligences and its relevance to education, researchers like Waterhouse (2006) and White (2008) have questioned the theory in relation to its adoption in schools. Waterhouse (2006) for example, asserts that the theory 'lacks adequate empirical support and should not be the basis of educational practice' (p. 207). She adds that:

Enthusiasm for their [multiple intelligences] application to classroom practice should be tempered by an awareness that their lack of sound empirical support makes it likely that their application will have little real power to enhance student learning beyond that stimulated by the initial excitement of something new (p. 222).

Waterhouse (2006) argues that the push for educators to adopt multiple intelligence strategies is harming teachers and their students. This, according to her, is because teachers, during their training, are ‘taught insufficiently supported theories of human cognition’ (p. 221). By using such theories as a basis for their classroom practices, Waterhouse (2006) argues, that other practices which may be more valuable to students may be displaced thereby harming a student’s chances of achieving academic excellence. Even so, White (2008) acknowledges that the theory of multiple intelligences is deemed useful by many classroom practitioners and that ‘MI-inspired practices can be productive’ (p. 628). Coffield et al. (2004) whilst supporting the idea that teachers must pay closer attention to their students’ learning styles, have also warned, that ‘beneath the apparently unproblematic appeal of learning styles lies a host of conceptual and empirical problems’ (p. 1). Therefore, they recommend that further critical, longitudinal and large-scale studies need to be undertaken within the field of learning styles in order to facilitate their adoption in education.

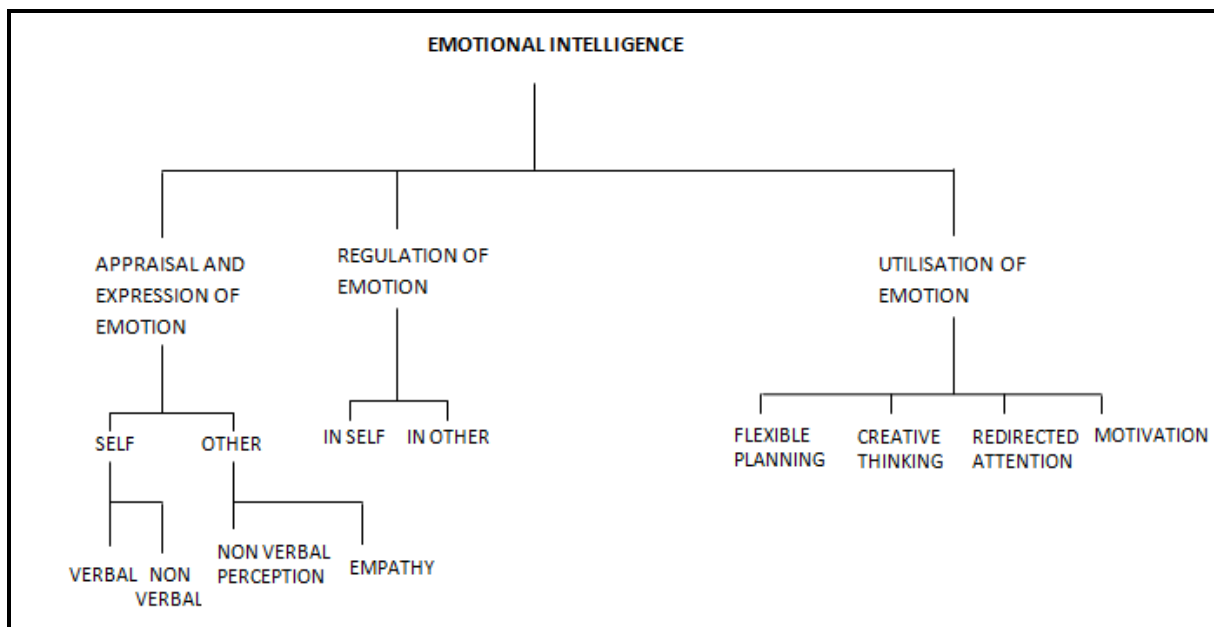
### **2.2.2 Emotional Intelligence**

The nature of emotion and its relationship with cognition is increasingly gaining prominence in the literature. According to Colman’s (2009) dictionary of psychology, the term Emotional Intelligence appeared sporadically in the psychological literature during the 1970s and 1980s. However, it was in 1990 that the concept was formally defined by American psychologists, Peter Salovey and John Mayer as:

...the ability to monitor one’s own and other people’s emotions, to discriminate between different emotions and label them appropriately, and to use emotional information to guide thinking and behaviour (Salovey and Mayer, 1990, p. 187).

Petrides et al. (2004) have suggested that Emotional Intelligence has its roots in Thorndike’s (1920) concept of social intelligence and Gardner’s (1983) concepts of intrapersonal and interpersonal intelligence (see also Mayer and Salovey, 1993).

Emotional Intelligence comprises ‘verbal and nonverbal appraisal and expression of emotion, the regulation of emotion in the self and others’ as well as ‘the utilisation of emotional content in problem solving’ (Mayer and Salovey, 1993, p. 433; see Fig 1). Although Mayer and Salovey are credited with coining the term Emotional Intelligence, researchers like Mayer and Cobb (2000), Richburg and Fletcher (2002) and Petrides et al. (2004) have suggested that Emotional Intelligence was made popular by Goleman (1995) with the publication of his book, ‘Emotional Intelligence’ which was subsequently featured on the cover of the TIME magazine (Gibbs, 1995). Fig 1 shows how Emotional Intelligence may be conceptualised. It highlights some of its key attributes and how they may be perceived or expressed. Despite its obvious usefulness with regards to how Emotional Intelligence may be conceptualised, critiques of Fig 1, may question the extent to which the regulation of emotions in others can be achieved within a learning environment. Indeed, teachers can regulate their students’ emotions by carefully selecting learning tasks and providing appropriate levels of guidance so that students are excited, motivated and willing to take active roles in the learning process. Students may however find the regulation of emotions in others more difficult to achieve.



**Fig 1: Conceptualisation of Emotional Intelligence**

Source: Salovey and Mayer (1990, p. 190)

In the book, Goleman (1995) asserts that Emotional Intelligence is a different way of being smart. He argues that, Emotional Intelligence includes knowing your feelings and using them to make good decisions; managing your feelings well and motivating yourself with zeal and persistence even when faced with frustration, as well as managing your relationships effectively. Hence, Goleman (1995) claimed that Emotional Intelligence is ‘as powerful, and at times more powerful, than IQ’ (p. 34). Unsurprisingly, it has been argued by many (for example, Allman, 1994; Cowley, 1994; Goleman, 2008), that whereas a high IQ can get you a job, it is the ability to demonstrate high levels of Emotional Intelligence that will keep you in the job or get you promoted.

In schools, Emotional Intelligence has been found to be a significant predictor of academic success (Mayer and Cobb, 2000; Parker *et al.*, 2004). Research conducted by Petrides *et al.* (2004) indicated that students with high levels of Emotional Intelligence are less likely to have unauthorised absences and are also less likely to be excluded from school. In addition, Goleman (2008) asserts that, an evaluation of over 233, 000 students in the United States of America, indicated that students receiving lessons in social and emotional skills improved on every measure of positive behaviour, such as classroom discipline, attendance, and liking school. Furthermore, Goleman (2008), posits that ‘teaching students skills like empathy, self-awareness and how to manage emotions makes them better learners’ (p. 8). According to Goleman (2008), social and emotional lessons must be embedded in the educational process. He subsequently adds, that students should be assigned to work with others and the group graded on teamwork and emotional relationships with each other as well as individual achievement. By paying attention to students’ emotional competencies, Goleman (1995) posits that, schools will become caring communities, where ‘students feel respected, cared about, and bonded to classmates’ (p. 280).

### **2.3 Emotional Intelligence and its relationship with pedagogy**

The fact that emotions impact upon students’ cognitive learning as well as teachers’ instructional behaviour (Salmon, 2002; Pekrun *et al.*, 2007; Han and Johnson, 2012),



indicates that it is useful to examine Emotional Intelligence in relation to pedagogy. Emotions like anger, happiness and fear, influence how people think, make decisions and perform tasks (Brackett *et al.*, 2011). Boekaerts (1993), for example, has argued that, although the cognitive system is designed for knowledge and skills acquisition, it can be facilitated or hampered by emotions. It is therefore unsurprising that, emotions have emerged as a vital element of the learning process during the past decade (Pekrun, 2005, Marchand and Gutierrez, 2012). Consequently, Chabot and Chabot (2004) have suggested that, it is important for teachers and educational researchers to recognise the important role of Emotional Intelligence if they want to enable their students to excel in the pursuit of academic excellence.

As indicated in my IFS (Donkor, 2013), Pugh (2008) attempted to examine the role of Emotional Intelligence in teaching and learning by identifying from the standards for the award of Qualified Teacher Status (QTS) in England and Wales, those standards (see also, Department for Education, 2012) that relate to Emotional Intelligence. With regards to relationship management for example, Pugh (2008, p. 10) identified links with the following standards:

Q1 – Establish fair respectful, trusting, supportive and constructive relationships with children and young people.

Q32 – Work as a team member and identify opportunities for working with colleagues.

These standards, although inextricably linked to the behaviour and performance of professional classroom teachers, can also be said to underpin the performance of highly achieving individuals and groups. Thus, it would be fair to argue, that, for a learning environment to be successful, all participants (teacher, students and other adults) within that environment must endeavour to establish respectful, trusting, supportive and constructive relationships with each other since together, they co-create the climate for learning.

In defining a model for Emotional Intelligence, Mayer and Salovey (1997) indicated that Emotional Intelligence comprises four abilities, namely perception of emotion, use of emotion to facilitate thought, understanding of emotion, and management of emotion. Examining these four distinct abilities highlights the significance of Emotional Intelligence in relation to teaching and learning. For example, in considering the relevance of self and relationship management in the learning process, Chabot and Chabot (2004, p. 81), have noted that ‘the first condition for learning is to feel good’, and that, this is often achieved when we are able to effectively manage the emotions associated with the learning process. According to Chabot and Chabot (2004), negative emotions affect all of our mental processes and, it is in managing such emotions that we are able to stimulate those emotions that support the learning process. Indeed, commonly used statements such as ‘do not let your emotions get in the way’, indicate that emotions do derail individuals from making intelligent decisions. Emotions have also been perceived as irrational feelings that are beyond our control. As non-cognitive processes, they have been viewed as disrupting the mind and preventing it from functioning objectively and rationally (Gillies, 2010). The theory of Emotional Intelligence however, enables us to understand that, emotions can make cognitive processes adaptive, and that, individuals can think rationally about their emotions (Brackett *et al.*, 2011).

Emotions can energise students’ thinking and thereby facilitate the learning process. This is because, when students feel secure, happy and excited about a task, their learning performance is enhanced. On the contrary, emotions such as anger, anxiety and sadness can distract students’ learning efforts and thereby limit their ability to attend to the tasks at hand (Ellis *et al.*, 1997). Furthermore, Ellis *et al.* (1997) in being critical, have observed, that the potential for making careless mistakes may be heightened when students are overly excited about a task that they are undertaking.

All of the assertions above indicate that any situation that elicits strong emotions can be detrimental to the learning process. That, ‘extra processing capacity is required for toning

down emotions and for tuning back in on a task' (Boekaerts, 1993, p. 151). In other words, more intellectual resources are used up when our emotions are heightened (Ellis *et al.*, 1997).

The ability to discriminate between positive and negative emotions (Mayer and Salovey, 1997) therefore, can enable learners to have sufficient mental room in order to effectively engage in a learning task (Ellis *et al.*, 1997). On the other hand, Storrs (2012), argues that, by explicitly attending to emotions, teachers are afforded opportunities to learn about and to respond to underlying conflicts, which in turn can enhance their students' learning. Hence, it is vital for educators and students alike, to learn about how they can effectively recognise and manage the emotions that they, as well as others feel within a learning environment. For, examining how emotions affect learning and how classroom experiences can impact on teachers' and learners' emotions is a crucial step towards the attainment of successful classroom environments. This does not mean that motivation and memory in learning are only affected by our ability to recognise and manage emotions. Indeed, experiencing and sharing of emotions are also important for instilling a love of learning as well as aiding long-term memory. This point is noted by Medina (2009), who has asserted, that extremely emotional events such as joyful or traumatic experiences, coupled with sharing of such experiences with others, can enhance memory significantly. Research studies by Nielson and Lorber (2009) also indicate that students are better equipped to retain and retrieve new information if they are exposed to emotionally arousing stimuli as part of the learning process. Furthermore, these assertions are supported by Shannin and Richard (1997) who have argued that emotional interests can lead to cognitive engagement and hence facilitate heightened attention and information recall.

### **2.3.1 Developing personal competence for the classroom**

In 'Working with Emotional Intelligence', Goleman (1998) posits that personal competencies such as self-awareness, self-regulation and motivation determine how we manage ourselves. According to him, these competencies guide our achievement drive; levels of confidence;

readiness to act upon opportunities; ability to take responsibility for personal performance and persistence in pursuing goals despite obstacles and setbacks.

Self-awareness is, without doubt, one of the key attributes of Emotional Intelligence. It encompasses the ability to recognise one's own feelings, understand why one feels that way and consequently, can be perceived as the first step towards dealing with emotions. An awareness of one's own emotions can exude self-confidence and the ability to have greater control over one's thoughts and actions. Self-awareness is also 'fundamental to building helping relationships with others' (Greenhalgh, 1994, p. 89).

As Greenhalgh (1994) asserts, a person who is 'sensitively aware of and acceptant' (p. 89) towards his or her own feelings is more likely to form a helpful relationship toward another. Hence, Gillies (2011) argues that, students should be encouraged to read and speak about their emotions fluently within the classroom rather than succumb to them. Storrs (2012) has also suggested the use of 'reflective journaling as a pedagogical strategy to enhance student self-awareness, critical thinking, and learning' (p. 3).

Helping students to identify what they are thinking and how they are feeling when they make decisions about their learning can, without doubt, help in boosting students' self-confidence, whilst ensuring that a positive classroom ambience, within which learning flourishes, is established (Gillies, 2011). The implication though, is that teachers must endeavour to model the use of self-reflective language that helps their students to get in touch with their emotional states of mind. For students of secondary school age - in particular - this may be a challenge, as teachers may be reluctant to deal with the emotional aspects of learning for fear that their actions may be misinterpreted. Yet, the support of a teacher is needed if students are to develop personal competence for a learning environment. For, as noted by Thorne (2007), one of the most important things that a teacher can do for his or her students is to develop self-belief.

Developing personal competence for the classroom also requires that students are trained to make accurate judgements about their own ability to undertake tasks. Bandura (1977) uses the term 'personal efficacy' (p. 79) to describe the ability to make sound judgements about one's own capabilities. He posits that personal efficacy involves a conviction that one can successfully execute the behaviour required to produce outcomes. Bandura (1977) adds that the strength of people's convictions in their own effectiveness determines the extent to which they will be prepared to cope with difficult situations. Strong personal efficacy helps people to raise their expectations and reduces anticipatory fears. On the other hand, people who lack personal efficacy according to Bandura (1977), 'will retain their self-debilitating expectations and fears for a long time' (p. 80). Therefore, to ensure that students meet the high expectations of their teachers, parents, schools and indeed, the government, it is crucial that their ability to demonstrate strong personal efficacy is nurtured.

Hargreaves (1985) has observed that although schools have always recognised the importance of students' abilities and skills in relation to the affective-emotional, physical-manual, aesthetic-artistic and the personal-social, there has been a heavy emphasis on the cognitive-intellectual skills and abilities. While maintaining a strong focus on the cognitive-intellectual, the other skills and abilities necessary for the overall development of students have been relegated to the background. In effect, Hargreaves (1985) argues that students only treat as valuable, knowledge, skills and abilities that are readily measured, usually in the form of tests, thereby neglecting the aspects of their training which are more likely to help them grow into 'responsible, well adjusted and interested young adults' (p. 57). Keys and Fernandes (1993), in their report submitted to the National Commission on Education – England, have also noted that the degree of academic emphasis, the nature of ability groupings and styles of teaching all contribute to students' disillusionment with schools, low self-esteem and low educational aspirations. Therefore, like Illich (1970, p.15) has stipulated, there is a need for an 'institutional arrangement' which is not restrained by curricula requirements, but allows for learning exchanges between people who are engaged in critical discourse. Then, would students find peers who would challenge them 'to argue, to

compete, to cooperate, and to understand' (Illich, 1970, p. 55), and thereby help them to develop key Emotional Intelligence competences.

### **2.3.2 Emotionally balanced classrooms**

Emotions are ubiquitous in classrooms (Meyer and Turner, 2006; Storrs, 2012). As a result, various kinds of human emotions can play a role in learning and achievement (Pekrun, 2005). Creating and maintaining an emotionally balanced classroom environment is therefore paramount to the learning process. For, it is within an emotionally balanced classroom environment that students can feel secure, cared for and able to take academic risks that support their learning (Greenhalgh, 1994; Meyer and Turner, 2006). The experience and expression of emotion by teachers and their students all contribute to the development of positive and emotionally balanced classroom environments, which without doubt, relate to greater engagement and motivation to learn, improved academic outcomes as well as enhanced social and emotional competence (Harvey *et al.*, 2012). As observed by Meyer and Turner (2006), engaging students in learning requires positive emotional experiences. This in turn, contributes to a classroom environment which fosters teacher-student, as well as student –student, interactions.

Marchand and Gutierrez (2012) like other researchers referred to earlier in this chapter (for example, Boekaerts, 1993; Pekrun, 2005; Brackett *et al.*, 2011), argue that emotions such as enjoyment, hope and pride relate positively to intrinsic motivation, effort and self-regulation, whereas negative emotions such as anger, frustration, anxiety, and boredom have been associated with reduced effort, lower performance, increased external regulation and decreased self-regulated learning strategies (see also, Daniels *et al.*, 2009; Pekrun *et al.*, 2009).

Traditionally, teachers may promote positive relationships within their classroom environment by listening to their students carefully (Cooper, 2010); responding to students' academic needs and feelings; offering support and encouragement, as well as valuing the contribution of their students. Teachers may also demonstrate empathic tendencies (Cooper, 2010); convey respect for their students; acknowledge students' capabilities and offer correction fairly and consistently. Such behaviour from teachers helps to improve human relations in the classrooms by promoting rapport, trust and mutual respect (Renner, 2000). Consequently, these actions offer opportunities to deal with any potential emotional barriers to learning.

Underpinning these behaviours however, is the fact that human relationships are crucial to the learning process. This is highlighted in Vygotsky's (1978) assertion that, all learning takes place within a social context and that, knowledge is constructed in the midst of our interactions with others. In a similar argument, Renner (2000) points out, that knowledge, through its contextual, political and historical components, is connected to, and shaped by, students' experiences. Considering the multicultural nature of today's society, students' experiences are likely to be varied. Their motivation, attitude towards work, the emotions they exhibit and how these are portrayed are all likely to be impacted, and these can affect the emotional climate of the classroom. Hence, in their quest for emotionally intelligent classroom environments, it behoves teachers to ensure that they keep their students focused, creative and excited about their learning. In addition to these, Storrs (2012) has suggested that, teachers can enhance teamwork and communication skills amongst their students by encouraging and supporting them to work collaboratively in research teams.

## **2.4 Theories of learning**

Social learning/cognitive theories (Bandura, 1977; 2002) draw attention to the fact that teaching and learning are vastly social activities. That, interactions between teachers, peers, and instructional materials influence the cognitive and affective development of learners

(Kim and Baylor, 2006). Such theories suggest that learning is constructed during our interactions with others, and that it begins from a social context (Guzdial and Carroll, 2002). In addition, Kim and Baylor (2006) have noted that ‘the human mind rarely works in solo; instead, it is shaped in social contexts while the individual is communicating within physical and social surroundings’ (p. 574).

Research studies by the seminal psychologist Lev Vygotsky indicate that social interaction is fundamental to learning and motivation. Vygotsky’s (1978) concept of the zone of proximal development (ZPD), for example, tells us that by collaborating with more capable others, learners can grow intellectually beyond their current capabilities. The ‘capable others’ refers to a teacher or peer who is deemed to be more capable than the learner in the subject being studied. The teacher or the more capable peer is thus essential to the learning process, and is perceived as being most effective when they work sensitively within the ZPD of a child whilst adopting encouraging and supportive strategies.

From a Vygotskian point of view, it is the teacher’s responsibility to assess the student’s understanding and to identify the point in the ZPD where the learner needs assistance. In traditional classroom environments, teachers support the development of their students’ understanding of concepts by posing questions, using examples to illustrate the points they wish to make, encouraging peer discussions, or using tests to assess a student’s level of understanding. Attempting to ascertain a student’s level of understanding or prior knowledge is thus paramount to the learning process. This is because it provides the impetus for making sound decisions about the next steps that need to be taken into account in the learning process. For example, testing enables teachers and students to gain insights into what learning has taken place. As a result, the ability to distinguish between what is known and what is unknown is enhanced, and so also, is the teacher’s (and student’s) ability to make accurate decisions about what next to study.



In recent years, the term ‘formative assessment’, sometimes referred to as ‘assessment for learning’ (AFL) has been used to describe the process of identifying a student’s current level of understanding in relation to a topic being studied. Black and Wiliam (1998a) assert that formative assessment encompasses:

... all those activities undertaken by teachers, and/or by their students, which provide information to be used as feedback to modify the teaching and learning activities in which they are engaged (pp. 7-8).

A similar definition suggested by Gipps (2005, p. 175) is that, formative assessment is when information from an ‘assessment is fed back to, or shared with, the learner to enhance learning’. This means that formative assessment, unlike summative assessment – which merely involves marking and grading students’ work in order to judge what has been learnt (Russell *et al.*, 2006) – is actually, part of the teaching and learning process. It can occur many times in a lesson and may involve the adoption of different strategies for encouraging students to express their thoughts about the topic being studied (Black *et al.*, 2005).

So, for example, at the start of the learning process, a diagnostic task may be used to ascertain the knowledge of the learner. Having gained an understanding of what students’ are thinking, the teacher may then adapt their teaching in order to meet the learning needs of the individual students. The teacher may also provide feedback to the students to ensure that the students are adequately aware of their own levels of understanding of the concept being discussed.

To establish good formative assessment practices in the classroom however, requires significant changes to most teachers’ current practices (Black *et al.*, 2005). This may include experimenting with new or different styles of teaching; adopting new questioning strategies; teaching students to understand learning objectives and to link them to assessment criteria; giving students more opportunities to explore their ideas, and trusting them to work collaboratively with each other whilst being critical of their own work as well as those of their peers. Further, this may require that the classroom environment is underpinned by

democratic principles – each person having a voice which is listened to – that students are aware of their own strengths and are willing to accept and work on their limitations with the support of their teachers and more capable peers. It is fair to add, nonetheless, that good teachers do assess formatively all the time in relation to emotion and motivation. As mentioned in Chapter 1, in face-to-face classroom contexts teachers observe and interpret students' facial expressions, bodily movements and vocal variety (Kanuka and Nocente, 2003; Andresen, 2009). Consequently, they are able to adapt their teaching to meet the emotional and cognitive needs of their students. Titsworth et al. (2010) add that such behaviour leads to students developing positive emotional responses towards learning, thereby enhancing their learning motivation and behaviour within the classroom.

Considering the time constraints associated with the delivery of a mandated curriculum, challenges associated with class sizes (average of 24 in the school where this study was undertaken), and the non-teaching duties required of teachers, it is not surprising that Black et al. (2005) observed from their surveys of teachers that formative assessment is not a strong feature of classroom work. This notwithstanding, Black et al. (2005, p.3) have noted that improving formative assessment will:

- Contribute substantially to raising standards
- Enable teachers to work smarter as opposed to working harder
- Will enable students to enjoy, understand and value their learning more
- Will enable teachers to enjoy their work more and to find it more satisfying

Vygotsky's (1978) assertion that all learning is a result of social interaction is as true about today's schools as it was in the 1900s. This is because the quality of teacher-pupil and pupil-pupil interactions remains paramount if activities inherent in formative assessment are to be properly developed. Evidence from the work of researchers such as Black and Wiliam (1998b), Black et al. (2005) as well as Miller and Lavin (2011) also indicate that assessment has a major impact on student motivation and self-esteem. Such observations emphasise the

pivotal role of Emotional Intelligence in relation to assessment in particular and learning in general.

Stiggins (2005), for example, has observed that the emotional effect of doing well in a test is that it enables students to see themselves as capable learners. Consequently, such students become increasingly confident, which in turn enables them to derive the motivation to strive for more success (Russell *et al.*, 2006). On the contrary, Stiggins (2005) argues that, the emotional effect on students who do not fare well in tests is that they lose confidence in their own ability to be successful learners. He adds that such students become deprived of the ‘emotional reserves needed to take risks’ (p. 324), they become de-motivated and embark on ‘an irreversible slide toward inevitable failure and lost hope’ (p. 325). Moreover, the self-esteem of such students is likely to decline as well, and there is an increased possibility of them carrying ‘strong negative emotions about their experiences into future learning’ (Russell *et al.*, 2006, p. 466). Being able to master the Emotional Intelligence skills of self-awareness and self-regulation for example, may therefore help students – particularly, those who fall into the second category – to understand and appropriately manage the emotions they experience in their learning. Such skills may also help the students in becoming more resilient whilst encouraging them to try harder in order to achieve positive learning outcomes. As noted by Stiggins (2005), public failure can also be embarrassing; it can discourage students from trying harder or even contributing to subsequent classroom discussions.

Recent developments in e-learning technologies have however, opened up new opportunities for innovation in assessment practices (Russell *et al.*, 2006). So that, the strategic adoption of online assessment tools can now be depended upon to ensure that students are supported and encouraged throughout the assessment and learning process.

In the first instance, an online environment has the potential to open up several opportunities for student-student as well as student-teacher interactions. This means that shy students, for example, have access to opportunities to share their perspectives with others by

communicating their knowledge and understanding in a relatively open situation, devoid of the tensions associated with asking questions in a traditional classroom setting. In depth understanding arising from conversation, argument, debate and discussion amongst and between learners, peers and teachers subsequently, leads to the social construction of knowledge (Russell *et al.*, 2006). And by the giving and receiving of feedback from peers (not just the teacher), students have the opportunity to develop their initial ideas further, before submitting the final version of their tasks for summative assessment.

This is not to suggest that such collaboration and corroboration does not or cannot take place in traditional classroom environments. Rather, the point being made is that online environments offer more opportunities for dialogue to happen, considering that it offers a 24 hour access as opposed to the 40-60 minutes available in a typical traditional classroom setting. Furthermore, the fact that students have opportunities to share their thoughts and to revise their initial propositions means that they are likely to do well. As indicated earlier, this can have the emotional effect of boosting students' self-esteem, confidence and the motivation to go on to achieve better grades. Additionally, with online assessment tools, it is possible to provide automated diagnostic comments and automated showing of the correct answer and reasoning (Gipps, 2005). This is reminiscent of Vygotsky's (1978) scaffolding in the ZPD (see also, Ahmed and Pollitt, 2010). Locating the point in the ZPD where the learner needs assistance consequently becomes easier, teaching and learning time is maximised and individual students are more likely to maximise their potential.

## **2.5 Using VLEs to support Emotional Intelligence**

Although the adoption of VLE technologies in education has become widespread in the last few years, a review of the extant literature suggests that the VLEs being used in secondary education are not emotionally intelligent. Unlike human instructors such as teachers, most VLEs are not able to draw upon cues such as students' body language and facial expressions linked to joy, sadness, frustrations or disappointments in order to support and thereby encourage students when they learn within such environments. And this is in spite of the

numerous other benefits that have been associated with VLEs in the literature (Cooper, 2006; Kear, 2007; Stiles, 2007; Persky *et al.*, 2009; Limniou and Smith, 2010).

There is little doubt that designing a VLE that is emotionally intelligent and consequently responsive to students' emotional and learning needs remains a challenge for both developers and educators (Wang and Reeves, 2007). Nevertheless, if Emotional Intelligence is perceived to be a critical competency for understanding students' learning experiences (Han and Johnson, 2012), then it behoves developers and educators to carefully examine it within the context of VLEs. Otherwise, learning within such environments will remain frustrating and uninspiring for students (Hove and Corcoran, 2008).

In a research study that explored the impacts of traditional lecture, slide-show supplemented lecture and VLEs on learning and frustrations among college students, Hove and Corcoran (2008) reported that participants in the VLE conditions indicated significantly higher levels of frustration compared to their peers who adopted the other two conditions. Similarly, Maki *et al.* (2000) have suggested that, students who enrol in VLEs tend to show diminished interest and reduced levels of satisfaction. It can be argued that students exhibit such behaviour when they learn within VLEs because the VLE does not stimulate the emotional experiences that promote enjoyment of the learning process. For, as Balaam *et al.* (2010, p. 1623) suggest, 'an emotional experience such as enjoyment of learning can direct a student's full attention to a learning task' and thereby enhance the student's academic motivation.

Hove and Corcoran (2008) have argued that learners experience higher forms of frustration within VLEs because within such environments, they are often not provided with explicit and regular guidance from their teachers. In addition to these, it appears that many VLEs have a limited capacity for successful interaction because they do not engender positive emotion in learners and teachers. And this is in spite of the fact that emotion, cognition, and behaviour are now understood to be highly interdependent (Han and Johnson, 2012).

Based on the definitions of Emotional Intelligence proposed in the literature, a VLE designed to support Emotional Intelligence must be empathetic to learner's emotional and educational needs. It must facilitate collaboration and relationship management, aid student motivation for tasks being undertaken as well as encourage trust and resilience. The subsequent sections consider some of the key attributes of Emotional Intelligence and how they may be adopted within the context of VLEs.

### **2.5.1 Empathy in virtual worlds**

Empathy, according to Batson et al. (1987), refers to the ability to accurately and dispassionately understand another person's point of view concerning his or her situation. It 'allows us entry into the emotional realms of others and an opportunity to feel their joy, pain, emotions and feelings' (Cheng *et al.*, 2010, p. 1449). In other words, being empathic means that one has the capacity to feel the same emotion that another person is feeling (Greenhalgh, 1994; Maibom, 2009; Taylor, 2011), taking into consideration the circumstances that they are faced with (Cunningham, 2009) and consequently, producing thoughts and feelings that are supportive of others (Cheng *et al.*, 2010).

The pivotal role of empathy in teaching and learning is encapsulated in the assertion by Kyriacou (1986) that it is important for teachers to see their classroom through the eyes of their students. This is because, 'learning is facilitated when pupils are understood rather than evaluated or judged' (Adalsteinsdottir, 2004, p. 98). And, it is through the modelling of empathic and encouraging behaviours that harmony is created within the classroom (Adalsteinsdottir, 2004).

In her paper, 'In search of profound empathy in learning relationships', Cooper (2010) identifies four types of empathy used in learning relationships:

1. Fundamental empathy – concerned with characteristics necessary to initiate relationships.
2. Functional empathy – involves the adaptation of empathy for dealing with large groups. In other words, developing a kind of empathy that works for particular situations. For example, a teacher treating the class as one entity during interaction.
3. Profound empathy – involves deeper understanding and higher quality relationships where teachers demonstrate personal levels of care and concern.
4. Feigned empathy – deceptive behaviour where people exhibit superficial signs of empathy.

Cooper (2010) argues that of these four types of empathy, profound empathy is the most powerful for the development of learning relationships and achievement. This is because profound empathy leads to the formation of positive relationships and thereby helps in understanding and alleviating the emotional barriers to learning. Unlike the other three, profound empathy emerges over time and with frequency of interaction (ibid). It does not take the form of the ephemeral empathy demonstrated by a car salesman, for example. Consequently, it results in ‘deeper understanding and higher quality relationships where teachers demonstrate personal levels of care and concern towards students’ (Cooper, 2010, p.87).

Empathic teachers are caring teachers. They are teachers who try their best to understand the needs of the students entrusted to their care. They allow themselves to be accepting human beings, relate to their students and consider student’s individual needs (Adalsteinsdottir, 2004). As indicated by Cooper (2010), due to the level of care and concern they have for their students, empathic teachers ‘create resources and environments that develop learners’ confidence, engagement, skills and knowledge’ (p. 88). Their classrooms are characterised by empathic ambience which is underpinned by trust. As a result, their students are more

open to constructive criticism, and relationships formed are underpinned by mutual respect (ibid), thereby providing further impetus for success.

Empathy is often communicated nonverbally through facial expressions and body language (Wang, 2011). Unfortunately, access to facial expressions and body language can be limited when learning takes place within a Virtual Learning Environment. The lack of empathy that may result can lead to the learning environment becoming impersonal and cold. As observed by Adalsteinsdottir, (2004), students working within such impersonal and cold environments often lose faith in themselves. Hence, they may become anxious and develop self-doubt; the consequence of such a situation would be a lack of interest in the VLE, the topic being studied and ultimately progress and achievement.

In considering empathy in the virtual world, Gorry (2009) has noted that it is easy to know more and more about others and yet care less about them. This is because it is relatively easier nowadays to know more about a person or their interests by ‘following’ them on Twitter or reading their blogs (online diary or journal). Other social network media such as Facebook offers its users opportunities to engage in real-time discussions as well as opportunities to post messages or comment on other peoples’ messages. Users of such media are also able to gain access to the profiles of other users and information such as birthdays, friends, friends of friends, special interest groups, whom a user has been communicating with as well as other activities that a user may be undertaking.

Contrary to Gorry’s (2009) argument that working within virtual environments can lead to a lack of empathy, other researchers argue that students who spend time online ‘may experience more opportunities to develop personal relationships’ (Mazer *et al.*, 2007, p.3) and that time spent online may be helping people to learn to be more empathetic (Wang, 2011). Wang (2011) subsequently draws upon a research study in which 1,283 people aged 18 to 30 were asked a series of questions about how much time they spent online and the degree to which they felt empathetic toward offline and online friends. According to Wang (2011), that



study revealed that users of social networking media expressed a significant amount of empathy online, and that the more college students spent on Facebook, the more empathy they expressed online and in real life.

Such findings suggest that the use of Facebook and other social network media may have positive implications for schools. Yet it is apparent that several schools – at least in the United Kingdom – have banned their students from using them in school. This is in fact the case at my own workplace, the institution within which the current study was undertaken. A question to ask then is: why ban a technology which has the capacity to promote empathy, collaboration and hence enjoyment and achievement? Undoubtedly, the answer lies with Winzenburg's (2012) assertion that the impact of Facebook and other social media on the classroom goes far beyond technological innovations and the ability to build relationships. According to Winzenburg (2012) such technology has led to young people publicly announcing intimate details without thought of the consequences. There is also the issue of online bullying (Wang, 2011) and the posting of 'discrediting or defamatory messages on users' Facebook websites' (Mazer *et al.*, 2007, p. 3). In addition, Mazer *et al.* (2007) argue that teachers run the risk of harming their credibility if they 'violate student expectations of proper behaviours' (p.3).

Nevertheless, I believe that, the time is right for schools to adopt into their VLEs, some of the qualities of social media that support and encourage empathy. This way, the VLEs being used in schools would become interesting and successful learning environments within which learning will be optimised.

### **2.5.2 Supporting Emotional Intelligence by using online forums**

The ability to nurture instrumental relationships (bonding well with others); induce desirable responses in others; send clear and convincing messages as well as collaborate and co-operate with others underpin the social skills competence within Goleman's (1998) Emotional

Intelligence framework. These skills are crucial for educators and their students, whether learning takes place within a traditional face-to-face classroom environment or within a VLE. For, a mastery of these skills helps to develop a team's capabilities by helping to create group synergy (Goleman, 1998).

One of the ways by which teachers can harness the affordances of VLE technologies in order to support such key Emotional Intelligence attributes is by using online discussion forums. According to Kanuka (2005), online discussion forums are text-based communication methods that have the potential to increase the quality of students' learning experiences through the improvement of student participation and critical thinking. This is possible because, the forum is a powerful tool that has the capacity to promote dialogue between students, and also between students and their teachers. Such dialogue can subsequently lead to learning because it enables a shared understanding to be developed (Guzdial and Carroll, 2002) as a consequence of the process of interaction where participants explain their individual perspectives about the topic being discussed.

Hence Nandi et al. (2012) assert that online asynchronous discussion forums are becoming a common feature in both on-campus and online courses. The relevance of online discussion forums is further highlighted by the fact that its use enables a 24-hour access to the topic being discussed as well as participants' contributions. Even so, Guzdial and Carroll (2002) have observed that, although learning does occur in online discussion forums, the rates of the discussions are fairly low compared to the levels of discussions that may be generated in a traditional face-to-face situation. According to Guzdial and Carroll (2002), they noticed in their observation of 18 classes that the length of a thread (a series of notes posted in response to a single note) in an online discussion forum averaged 2.2 notes. This implies that the average discussion consisted of a note and a single note in response. Such an observation may give the indication that online discussion forums are not well patronised. In spite of this, researchers such as Guzdial and Carroll (2002) and Nandi et al. (2012) argue that sometimes students do not respond to a peer's post simply because the response that they had in mind

may have been posted by another student. Thus, a student may read a post and learn from it without necessarily responding to it.

Mason (2011) made a similar observation in his study of student engagement with, and participation in online forums. According to Mason (2011), after running a forum for two weeks, he noticed that only 10 out of 56 students posted to the forum. Nevertheless he also noted that an unknown number 'lurked', thereby at least gaining some benefit from the task (p. 261). The danger associated with such observations is that, some students can become relaxed and hence may rely solely on the contributions of an enthusiastic few. With time, this can impact negatively on even the keen participants of the forum (Kear, 2007); thereby leading to the lack of engagement with, and participation in the forum.

Nandi et al. (2012) have consequently identified three levels of participation in online discussion forums. The first group comprises those students who simply read the messages posted but do not participate in discussions. The second group of students 'treat the forum as a notice board, posting their own positions but having limited interaction' (p. 7), whereas for the third group of students, participation is interactive and the forum is used to its full potential.

There is no doubt that most of the teachers who set up forums for their students would want their students to fall into the third group. Nevertheless, Guzdial and Carroll (2002) have also observed that even those students who fall into the first group mentioned above, may learn by reading others' posts and incorporating ideas into their own assignments. This indicates that forums can play an important role in achieving successful learning outcomes. For, the ideas presented by others in the forum can help to generate new lines of inquiry and opportunities to reflect amongst the participants.

Therefore, it is important for teachers who desire to set up discussion forums to consider ways by which they can encourage active participation amongst all of their students. Andresen (2009) for example, has argued that the teacher must identify new ways to express emotion or passion for the topic being discussed if success in using the forum is to be achieved. Primarily, this is because, in asynchronous discussion forums participants are often separated by time and space. Consequently, ‘tone of voice, body language, and spontaneous questions to clarify concepts’ (Andresen, 2009, p. 250) are all lost.

Mason (2011) asserts that, to encourage interaction and avoid lurking there is a need for considerable moderator participation in online forums. He argues further that such participation could take the form of discussion management, sustained facilitation and focusing on learning topics. Andresen (2009) adds that the increased participation of the moderator (teacher) can lead to increased student interest and motivation because it encourages students to perceive their teacher as being enthusiastic and having more expertise.

Ultimately, the reason for setting up and managing a forum within a VLE is to create an online learning environment that promotes high levels of learning (Andresen, 2009). However, if it is well managed, the forum can also serve as a platform for developing key Emotional Intelligence attributes; users could learn to work with their peers collaboratively on tasks, develop their self-confidence and ability to express their points of view as well as learn the important Emotional Intelligence competence of self-monitoring or self-regulation. This is because within a forum one must learn to accept others’ opinions even when they disagree. Also, before one posts to the forum, they must consider carefully what it is they want to put across and how that impacts on them as individuals, as well as their peers – bearing in mind that they will be in the same physical classroom environment with their peers in subsequent lessons. Thus, the use of forums can help students to become reflective learners (Kear, 2007). Forums can also help students to acquire critical thinking skills (Mason, 2011) which in turn, can help in the development of the Emotional Intelligence skills of self-awareness and self-regulation and also higher cognitive skills.

Researchers such as Wang and Reeves (2007) and Andresen (2009) have also indicated that the use of online forums can be more effective than traditional face-to-face discussions in the sense that it allows those people who need more time to participate to contribute to a discussion. Similarly, Kear (2007) has noted that in online forums ‘students have time to think about what they want to say, and can edit their contributions before they post them’ (p. 4). Also, within a VLE forum, there is always a transcript of the discussions held for study purposes even after the discussion has taken place. Thus, it is possible for students to refer to previous discussions when needed.

### **2.5.3 Presence within virtual environments**

The ability and motivation to learn in a VLE has also been linked with a phenomenon referred to in the literature as ‘presence’ (Persky *et al.*, 2009; Selverian and Hwang, 2003). According to Persky *et al.* (2009), the term presence refers to ‘perceiving as reality, the virtual environment as opposed to the physical environment encompassing that virtual environment’ (Persky *et al.*, 2009, p. 263).

Presence in a VLE may be spatial or social (Selverian and Hwang, 2003). Whilst spatial presence refers to psychological perceptions of seeing, hearing or touching real persons, places or things, social presence indicates psychological perceptions of technology-mediated persons, places, or things that can see, hear, touch or respond to the technology user in some way (*ibid*). In other words, spatial presence indicates the ability of the technology to create an illusion such that the person using the technology does not notice the technology. Social presence on the other hand, refers to the situation whereby the perceived interaction involves a human’s response (Taylor, 2011). Persky *et al.* (2009) add that ‘a high level of presence is related to better performance on learning outcomes in VLEs’ (p. 263). This means that the success of a VLE can be said to depend on the extent of non-mediation that enable illusions of teachers and subject matter (Selverian and Hwang, 2003).

My review of the extant literature did not give any indication of research studies that have explored the notion of ‘presence’ from the perspective of secondary education. Hence identifying the best strategies that may be used in order to encourage teacher or student ‘presence’ within VLEs remains a challenge. It is thus useful to examine how teachers can encourage their own as well as their students’ ‘presence’ within a VLE.

On the other hand, Mazer et al. (2007, p.2) have argued that ‘factors such as font use, language, and punctuation all affect student perceptions of teacher immediacy’ when learning takes place in virtual environments. Hence, they assert that students are more likely to communicate with their teachers within an online environment if the teacher uses immediacy behaviours such as students’ first names and emoticons to convey emotions. This is because, perceived social presence can increase civility, trust and the willingness to share opinions with others (Mon, 2010). Furthermore, Robinson (2009) suggests that, by acting as role models for good online interaction and social presence, teachers can enhance group cohesiveness and thereby encourage social presence and a sense of community amongst learners in a virtual environment.

Peterson (2005), Falloon (2010) and Taylor (2011) have all explored the use of interactive avatars in supporting the achievement of learning goals. According to Peterson (2005) avatars are online manifestations of self in a virtual world that are designed to enhance interaction within a virtual space. Taylor (2011) provides a simpler description by asserting that avatars are ‘visual, on-screen representations of users’ (p. 207). Thus, avatars enable users of virtual environments to take up a visible persona, and thereby help in facilitating social interaction (Peterson, 2005; Falloon, 2010; Taylor, 2011).

In his paper, Falloon (2010) noted that although the use of avatars in virtual environments for social networking and entertainment is now well-established, the same cannot be said of their

use within educational contexts. Nevertheless, Falloon (2010) maintains that the use of avatars in learning environments can help students to communicate their understanding of a task in ways which are less intimidating or embarrassing compared to traditional face-to-face situations. This is because a learning environment within which avatars are used provides students with a flexible and creative medium within which they can construct and share their knowledge representations. Using avatars enables students to customise the appearance and behaviour of a character in a way that provides them with a sense of identity and ownership. Hence avatars are attractive to students (Chen *et al.*, 2012); they contribute to social presence within virtual environments (Taylor, 2011), and induce greater emotional involvement than text alone (*ibid*). Consequently, there is a high motivational value for using avatars to communicate learning outcomes (Falloon, 2010).

Whilst acknowledging the powerful role that avatars can play in promoting presence and hence greater emotional involvement (including perceived intimacy, greater trust and greater satisfaction within virtual environments), Taylor (2011) has also warned about the possibility of inducing negative emotional experiences. He argues that messages that are hostile may, when accompanied by an avatar, lead to more negative emotional reactions such as anger or sadness, which could in turn be directed towards the actual person(s) perceived to be represented by the avatar. As a result, Chen *et al.* (2012) assert that avatars should be polite, emotionally positive, possess a real voice with full social cues and demonstrate proper hand gestures.

It may be argued that, the intended goal for using avatars within a learning context such as a VLE is not to promote negative emotional experiences. Quite often, their purpose is to mimic human characteristics such as facial expressions and gestures (Dodds *et al.*, 2011), so as to create an interactive user interface that provides students with ‘lifelike interactions’ that encourages and motivates them (Chen *et al.*, 2012). However, teachers may spend much time in learning the skills associated with the designing of vivid, detailed virtual humans (*ibid*; Kear, 2007). This in effect can impact negatively on learning outcomes, as valuable teaching or planning time may be lost in the teacher’s attempt to create a ‘presence’ which may not

necessarily guarantee a successful outcome. This is not to suggest that teachers have not got the skills to create useful avatars. Nor does it suggest that teachers should not make efforts at creating meaningful ‘presence’ within their school’s VLE. Rather, it is being suggested that in attempting to create a ‘presence’ with VLEs, teachers should consider other innovative ways so that curriculum time is not wasted. For example, it might be that teachers consider the use of videos of real people. After all, what is the point in going through the challenges of mimicking a person (avatars) when the real person can be recorded in a short video clip?

#### **2.5.4 Communication within VLEs**

One of the key characteristics that underpin ‘presence’, relationship management, collaboration and empathy within successful learning environments is the ability to communicate effectively (Kear, 2007; Mazer *et al.*, 2007; Leese, 2009; Mon, 2010; Delahunty, 2012). As indicated on several occasions throughout this literature review, we often have the benefits of body gestures to accompany our speech when we engage in face-to-face dialogue (Andresen, 2009; Delahunty, 2012). Dodds *et al.* (2011) refer to those aspects of our communication that are not expressed in words such as facial expressions, body postures and gestures as nonverbal communication. They argue that such ‘nonverbal behaviours are able to communicate something in addition to accompanying spoken words’ (Dodds *et al.*, 2011, p. 2).

As with face-to-face discussions, ensuring successful communication within a VLE is subject to varying conditions (Von Neuforn, 2007; Kear, 2007). This is the case even in situations where some degrees of success have been achieved in recruiting and maintaining membership to the VLE. According to Von Neuforn (2007), communication within a VLE is often limited to purely text-based language. In order to be able to operate effectively within a VLE therefore, it is imperative to ensure that all forms of nonverbal communication are compensated for. For example, it may be desirable to use emotionally stimulating instructional materials (Weiner, 1990) and visually stimulating educational formats (Hove and Corcoran, 2008). For as Cooper (2006) suggests humans learn by adopting a multi-



sensory approach and not just through text. Hence, when working within a VLE it is useful to adopt a multi-media approach which allows maximum transference of information including personal and social information that is intrinsic to learning (ibid). The intensity of focus and engagement created by multi-sensory interactions is then enhanced, the mind is deeply engaged and the extent to which what is learnt can be remembered, more likely to be improved (Damasio, 1999).

Cooper (2006) has argued that VLEs may need to take into account the affective and cognitive nature of learning in order to be successful. In other words, affective issues need to be paid considerable attention in the development of VLEs since ‘unfriendly or frustrating’ environments can hinder communication and interaction and thereby reduce esteem and discourage engagement. Indeed, such an argument is valid because as Cooper (2006) points out, students who are used to being able to interact easily either face to face or with computers are very likely to get frustrated with a system that is unintuitive and consequently may be at risk of disengaging with what is being learnt.

Additionally, Kear (2007) has argued that given the prevalence of VLE technologies in education, it is important to critically assess the communication tools that are already built into VLEs. In her investigation of the communication aspects of VLEs, Kear (2007) identified tools such as chat rooms as important in adding ‘vitality to online communication’ (p. 7). According to her, chat rooms help to develop a sense of community among participants; avoid the frustration time lags associated with asynchronous communication, and therefore make group decision-making more effective. Furthermore, Kear (2007) has suggested that due attention must be given to tools that allow users to filter out certain messages, and flag others for attention. Most importantly, she asserts that it is important for VLEs to be based on structures and processes that make sense to students, have straightforward navigation and use clear terminology.

The communication aspects of VLEs cannot be taken for granted if VLEs are to be depended upon to develop or improve upon students' Emotional Intelligence. This is because, within the context of VLEs, interpreting others' attitudes and values is not a straight-forward task (Delahunty, 2012). The potential for misunderstanding amongst participants may be heightened as a result of the absence of body language and the opportunity to clarify one's position immediately in cases where they have been misunderstood (ibid). It is imperative therefore, that in developing VLEs, we take advantage of the benefits afforded by other multi-media learning tools rather than focus solely on text.

## **2.6 Summary of chapter**

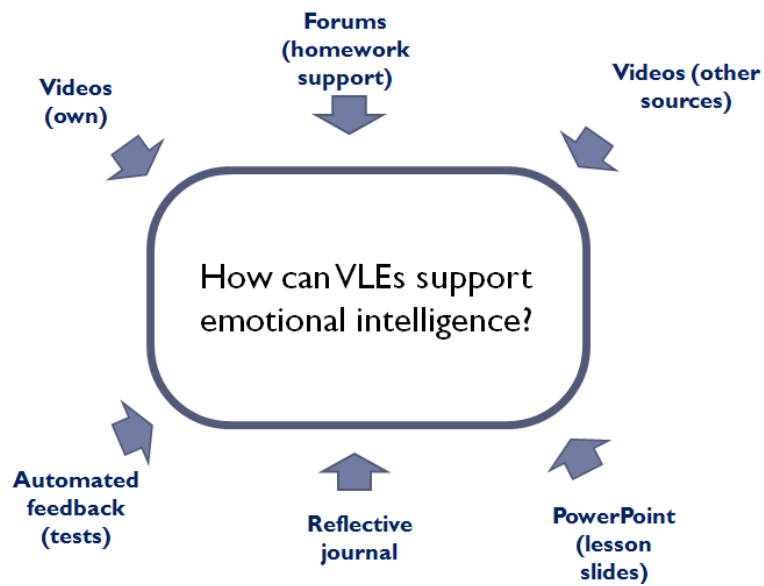
This literature review has considered some of the themes that are connected to my research study. Notably, issues pertaining to intelligence and how societal perception of intelligence has evolved in the last century have been discussed. Also discussed in this literature review are some theories of learning. In particular, Vygotsky's zone of proximal development has been considered in light of current trends in assessment. The opportunities that online assessment tools offer for efficiently undertaking assessment tasks have also been discussed.

Most importantly, the concept of Emotional Intelligence has been examined. Its origin, definitions and relevance to teaching and learning has been explored in relation to their adoption into VLEs. As a result of this literature review, it has also become apparent that VLE technologies are becoming increasingly widespread within education. This means that schools are now more able to adopt parallels with industry as teachers, students and parents will be offered the opportunity for 24 hour access to curriculum resources and support, thereby 'providing students with a seamless learning experience that transcends traditional boundaries' (John and Wheeler, 2008, p.105). In addition, the literature review has helped in situating my research focus within the context of the wider research community. It has helped to bring to light the gap within the literature which my research study seeks to address: Firstly, the fact that most research studies into VLEs have been undertaken within the higher and further education sectors, whilst very few of such studies have been

undertaken in secondary levels or below, has been highlighted (Oliver *et al.*, 2009). Secondly, it has become apparent that research studies that attempt to amalgamate the ‘student voice’, the opinions of teachers and the views of VLE Content Developers in the development of a VLE intended to support Emotional Intelligence are lacking from the extant literature. Hence, as Hove and Corcoran (2008) have noted, courses employing educational technologies such as VLEs have the tendency of being prematurely driven by technology rather than pedagogy. Finally, it has become apparent that unlike humans the VLEs being used in secondary schools are not emotionally intelligent. However, their strategic adoption can help to develop students’ Emotional Intelligence competencies. This has not been explored.

The current research will contribute to the field of Emotional Intelligence and VLEs. This is because it will demonstrate ways by which VLEs may be used in order to support Emotional Intelligence during face-to-face classroom interactions. In addition, the research study draws upon the views, experiences and expertise of key stake holders (students, teachers, TAs and VLE Content Developers), directly involved in the teaching and learning process. It thus provides a pedagogical basis for using VLEs to support Emotional Intelligence. It is hoped also that the findings will help to reduce the frustration encountered by users when they work within VLEs and ultimately, help in maximising students’ potential when they learn within such environments.

A conceptual framework for planning the research is shown below in Fig 2. It highlights the key activities which in my opinion and on the basis of this literature review, can be undertaken within a VLE in order to facilitate the development of students’ Emotional Intelligence and hence emotionally stable classroom environments.



**Fig 2: Conceptual framework for this research**

Details of the particular strategies to be employed are presented in the next chapter. The next chapter also presents the methodology used for this research study, methods of data collection, procedures for selecting the research sample, ethical considerations as well as issues pertaining to the validity and reliability of the data collected.

## Chapter 3

# Methodology

### 3.1 Introduction

This chapter describes and discusses the methodology applied to the current research. As noted by Cohen et al. (2007), methodology is not only concerned about the outcomes of a study, but also the process of conducting it. Hence, the chapter aims to uncover and justify any assumptions and decisions made within the research study as far and as practically as possible (Clough and Nutbrown, 2007), so that any claims made in the current research may be assessed in relation to the traditions of enquiry used.

The chapter is consequently divided into eight key sections. The first section identifies some of the research strategies adopted by educational researchers in relation to the philosophical issues underpinning educational research. My philosophical position as a researcher and the research strategy used for this study are subsequently discussed. Next, the questions that this thesis attempts to answer are presented, after which an in-depth description of how the research sample was chosen, the data collection methods used and issues pertaining to ethics are discussed. The chapter concludes with the discussion of the measures taken to ensure the validity and reliability of the research process and findings.

Table 1 below lists definitions of some of the key terms used throughout this chapter and Chapter 4. These have been provided in order to ensure that the contexts within which they are used are clear to the reader from the outset.

Term	Description
Ontology	The nature of being/of reality: what is there to be known? Your own situation in the world and how you perceive it is likely to inform your ontological position.
Epistemology	The nature of knowledge: how do we know what there is to be known? Your ontological position is likely to inform the way you view knowledge, and what knowledge is important and salient to particular research questions you may wish to ask.
Methodology	How can we go about acquiring knowledge and making changes? The way you understand and select knowledge is likely to inform the methodology you construct for your project work.
Methods	What techniques and processes are appropriate for acquiring knowledge and creating change? The methods you use are part of the methodological framework that you will construct.

**Table 1: Showing key terms referred to in Chapters 3 and 4**

Source: Costley et al., 2010, p. 81

## 3.2 Philosophical issues

In designing this research study, it was important to consider the perspectives of those researchers who have gone before me. This was considered as a valuable part of the research process because: firstly, it helps to locate my studies within the wider academic debate. Secondly, gaining an understanding of the research perspective of other researchers helps in shaping and sharpening my own ontological, epistemological and methodological perspectives.

The literature on educational research indicates that there is no single pathway to good research (Denscombe, 2010). Instead, the success or otherwise of a research strategy has been said to be underpinned by ‘the notion of fitness for purpose’ (Cohen *et al.*, 2007, p. 78). As a result, several strategies for undertaking educational research have been proposed in the literature (Cohen *et al.*, 2007; Denscombe, 2010; Koshy, 2010), and it is the researcher’s responsibility to make decisions and to use discretion in order to ensure the successful completion of their research project, with the aim of collecting valid and reliable data that is rigorously analysed to provide a balanced view in answering the research question.

To facilitate the research process Denscombe (2010, p. 4) has suggested three key questions that researchers need to consider when deciding on which research strategy to adopt. These are:

1. Is it suitable? – In other words, how useful and how appropriate are they?
2. Is it feasible? – In other words, does the strategy take into account the practical aspects of undertaking the research?
3. Is it ethical? – In other words, would anyone suffer harm as a consequence of participation in the research?

According to Denscombe (2010), the answers to these questions may point to a particular strategy. Nevertheless, he adds, that ‘it is also possible that no single strategy stands out as the winner on all points’ (p. 4). Hence, he suggests that in such cases the researcher must consider two or more alternatives and consequently draw upon each of their strengths. This stance has been affirmed by Denzin and Lincoln (1994), who have argued that often ‘researchers deploy a wide range of interconnected methods’ (p. 2) so that they can gain more insight into the subject matter at hand.

Due to the multiplicity of perspectives and interpretations associated with social phenomena, Opie (2004) has also noted that most research topics can be ‘approached from a range of different theoretical and philosophical positions’ (p. 18). Historically, the approaches to

inquiry adopted by educational researchers have been categorised as quantitative or qualitative (Guba and Lincoln, 1994; Johnson and Onwuegbuzie, 2004). Whereas the former is based on testing a theory that is composed of variables, measured with numbers, and analysed with statistical procedures, the latter involves the building of a complex, holistic picture, formed with words and comprising the detailed views of informants (Creswell, 2009).

The dichotomy between quantitative and qualitative research methodologies has consequently been identified by Pring (2000) as a major cause of the disagreements between educational researchers. It has been argued that contrasting paradigms (ways of viewing the world) such as positivism and constructivism have their roots in the quantitative – qualitative distinction (Guba and Lincoln, 1994; Anderson, 1998; Walliman and Buckler, 2008). For example, positivism is often associated with researchers adopting a quantitative approach. It is assumed to be based on a rationalistic and empiricist philosophy (Mertens, 2007) and is characterised by the use of terms such as objectivity, neutrality, discovery and reality (Scott and Usher, 1999). In constructivism, the metaphors of discovery and finding give way to the metaphors of constructing and making (Smith and Hodkinson, 2002). Hence constructivists uphold the characteristics consistent with those of qualitative methodologies (Smith and Hodkinson, 2002; Mertens, 2007). Such researchers prefer to treat theory as something that emerges out of the collection and analysis of data with the aim of understanding the subjective world of human experience (Cohen *et al.*, 2007). With the critiques of positivism and constructivism have emerged new paradigms (Scheurich, 1997; Mertens, 2007). One of these, *pragmatism*, aims to draw from the strengths of both quantitative and qualitative methods (Johnson and Onwuegbuzie, 2004). Researchers adopting a pragmatic stance, therefore, acknowledge the significant overlaps that can exist among different research strategies. Hence, for such researchers what matters is *what works* and *why*.

As a result of the importance that educational researchers attach to paradigmatic issues, Guba and Lincoln (1994), assert that in conducting research, researchers must position themselves within a paradigm. Anderson (1998) adds that in examining research it is useful to bear in



mind the research approach used, the researcher's view of the world, what assumptions the researcher is using and the traditions from which the questions and strategies emerged. This point is emphasised by Mertens (2007) who asserts that it is important for researchers to 'understand the prevailing theoretical paradigms, with their underlying philosophical assumptions' (p. 7) when they plan and conduct their own research or read and critique the research of others. The next section therefore presents my philosophical position in relation to the current study. It highlights the assumptions underpinning the position and provides explanations for choosing the research strategy adopted.

### **3.3 My research position**

In considering my philosophical position in relation to this study, I examined first of all, the main theoretical paradigms adopted by educational researchers and the philosophical assumptions associated with them. I then considered my own study in light of those assumptions and subsequently positioned myself with the worldview that closely approximates my own – constructivism. This research study is therefore guided by the principles underpinning qualitative research.

As suggested by Walliman and Buckler (2008), constructivism is particularly 'relevant when studying anything to do with human society' (p. 162). This is because, in their opinion, the scientific methods associated with positivism are poorly equipped to track the inconsistencies, conflicts, ideals and feelings that form an important part of human life. Besides, organisations, groups, and social systems do not exist apart from humans; meaning that that they too cannot be understood or measured in some objective way (Orlikowski and Baroudi, 1991). Hence a constructivist approach was better suited to this research study – a study that sought explanations and views about Emotional Intelligence and people's perceptions of how it may be adapted within a Virtual Learning Environment.

Ontologically, I did not share the view upheld by positivists which stipulates that one reality exists and that it is the researcher's job to discover that reality (Guba and Lincoln, 1994). Instead, I shared the constructivist's stance that 'reality is socially constructed' (Mertens, 2007, p. 12), and that being humans, we are encumbered by our own experiences and viewpoints (Walliman and Buckler, 2008). Thus, I embrace the idea that 'realities' are not necessarily out there to be discovered by an objective inquirer; 'realities' may also be constructed by people as they attempt to make sense of their surroundings. Hence, with regards to this research study, I did not support the positivist's epistemological argument that 'objectivity is the standard to strive for in research' (Mertens, 2007, p.11).

I agree, nevertheless, with those researchers who have argued that it is important for researchers to ensure that their own values and biases do not influence their research studies in ways that can distort their findings. This does not mean that I support the value-neutral approach to research proposed by positivists. In fact, Pring's (2000) assertion that research can never be value-free resonates well with me. This is because I am convinced that at the very least, values influence the choice of research method as well as the ontological and epistemological position adopted by the researcher (Greenbank, 2003). For, as Rokeach (1973) suggests, values refer to our preferred modes of conduct and include what the researcher believes is the most effective way of undertaking a study. Thus, the constructions of what constitutes the realities of a case 'are shaped by the values of the constructors' (Pring, 2000, p. 250). Therefore, instead of trying to create a sort of objective distance from the topic of inquiry through the use of instruments, Yin (1992) argues that it may be appropriate for the researcher to experience directly the phenomenon being studied.

Also, it is fair to assert that no particular way of describing the world has the capability to fully capture the richness and uniqueness of our everyday experiences or the complexities of educational phenomena for that matter. So methodologically, my position is that rather than focusing on a particular way of deriving meaning from a research study, educational researchers must be eclectic. In other words, they must endeavour to use the best methods available to them in their search for 'reality' irrespective of the paradigm(s) from which such

methods emerge. After all, the purpose of educational research, I believe, is not to champion the course of one paradigm over the other, but to collect and analyse information about the world of education so as to understand and explain it better (Opie, 2004).

Fundamentally, my philosophical stance as a researcher is that of an ‘eclectist’ (Walliman and Buckler, 2008). Such researchers, according to Walliman and Buckler (2008), are of the view that certain things can be known by making predictions whereas being human means that other subjects are open to debate and different interpretations. For me, eclectism is not a case of finding a safe haven. Rather, it is about drawing out the best components from different philosophical models in an attempt to build one’s own personal philosophy; a philosophy that upholds my values and allows me to do justice to my research study.

### **3.4 Chosen strategy - case study**

The case study strategy was adopted for this thesis; the object of the study being, how to use a VLE designed for secondary school students to support Emotional Intelligence. This is because case study research is a ‘useful way to systematically look at a specific case, collect data, analyse and interpret findings within a given context’ (Anderson, 1998, p. 152). Besides, its focus is on real situations, with real people in an environment which is often familiar to the researcher (Opie, 2004), and with the view to providing an in-depth account of events occurring in that particular context (Denscombe, 2010). To this end, the case study represents the most appropriate strategy to adopt for this research study as its characteristics approximate very closely to the research intentions set out in the first chapter.

By definition, case study research involves ‘the examination of an instance in action’ (Bassegy, 1999, p. 24). The instance, also referred to, as a phenomenon, may be for example, a child, a clique, a class, a school or a community (Bassegy, 1999; Cohen *et al.*, 2007). And the purpose for studying it, is to gain an in-depth perspective (Denscombe, 2010; Swanborn,

2010) with the view of making generalisations about the wider population to which the instance or phenomena belongs (Cohen *et al.*, 2007).

Case study research has a long and complex history within social research (Swanborn, 2010). Referring to the works of renowned researchers such as Stake (1995), Yin (1994, 1989) and Miles and Huberman (1984, 1994) for example, Swanborn (2010) argues that there are several different strands of case study research. According to him, the label 'case studies', seems to be used for many purposes, resulting in confusions about when and how it should be used. Consequently, Swanborn (2010) posits that as a research strategy, case studies are difficult to define.

Even so, Hitchcock and Hughes (1995), and Yin (2009) have identified case study research as a suitable research strategy to adopt when investigating 'how' and 'why' questions in contexts within which the researcher has little control. Accordingly, Yin (2009) posits that case study research is the preferred strategy for addressing such questions because the researcher, in such situations, is often interested in 'operational links' which need to be 'traced over time, rather than mere frequencies or incidence (p.9). Additionally, Yin (2009) has proposed three types of case studies: explanatory, descriptive and exploratory.

Explanatory case studies are appropriate for undertaking causal studies (Wilson, 2009; Yin, 2009). Descriptive case studies are more suitable for providing analytical accounts of educational events, projects, programmes or systems aimed at illuminating theory. In view of that, such case studies give theoretical insights which are expressed as a claim to knowledge in a discursive manner (Bassegy, 1999). The third type, exploratory case study, is used 'to develop pertinent hypotheses and propositions for further inquiry' (Yin, 2009, p. 9). Furthermore, case study research has been recognised by Clough and Nutbrown, (2007) as a prime example of qualitative research, even though Yin (2009) has also observed that they can 'include, and even be limited to quantitative evidence' (p. 18). On the basis of the discussions put forward, it is worth pointing out that the current study took the form of a

descriptive case study. The IFS (Donkor, 2013) on the other hand, was exploratory in nature and to an extent served as a pilot study.

A review of the literature brings to light several criticisms of the case study as a research strategy. Amongst such criticisms are arguments that case study research studies lack rigour, result in massive unreadable documents and have little to offer in terms of scientific generalisations (Yin, 1994). Commenting on the lack of generalisability associated with case study findings in particular, Atkinson and Delamont (1985) argue that:

If studies are not explicitly developed into more general frameworks, then they will be doomed to remain isolated one-off affairs, with no sense of cumulative knowledge or developing theoretical insights (p. 39).

Yin (2009) asserts, however, that ‘case studies, like experiments, are generalisable to theoretical propositions and not to populations or universes’ (p. 15). Similarly, Bassey (1999) has expressed a disagreement with the assertion made by Atkinson and Delamont (1985) by claiming that case studies can contribute to theoretical frameworks which underpin both educational practice and policy. Consequently, he uses the term ‘fuzzy generalisation’ to describe the extent to which findings from a case study may be disseminated. According to Bassey (1999), the use of the term ‘fuzzy generalisation’ carries with it an element of uncertainty. Thus, the likelihood of there being exceptions is clearly recognised and the findings of a study are presented in a way that indicates that ‘something has happened in one place and it may also happen elsewhere’ (p. 52).

Unlike statistical generalisation – which claims that there is an x per cent or y per cent chance that what was found in a sample will also be found throughout a population, or scientific generalisation – which suggests that a hypothesis stands as a generalisation because it withstands all attempts at refutation, Bassey (1999) argues, that fuzzy generalisations arise from ‘studies of singularities and typically claims that it is possible, or likely, or unlikely that what was found in the singularity will be found in similar situations elsewhere’ (p. 12).

In other words, by making a fuzzy generalisation the researcher is saying:

This is what happened in this case, these are what appeared to be the significant aspects of it, now you could consider how they might apply to your situation in order to make change happen (Pratt, 2003, p. 30).

This notwithstanding, Hammersley (2001) and Pratt (2003) have both raised questions about the validity and uniqueness of Bassey's (1999) notion of fuzzy generalisation. Nevertheless, they seem to be in agreement that as a result of case study findings and hence fuzzy generalisations, we can have theoretical knowledge of causal relationships upon which precise and fully formulated scientific laws may be based if required (see also Yin, 2009, p. 16).

A particular aspect of case study research which resonates with me – an eclectic – is that it has no specific methods of data collection or of analysis which are unique to it (Bassey, 1999). This is in spite of the fact that case study research frequently follows the interpretive tradition of research (Cohen *et al.*, 2007). Methodologically, case study research can be eclectic. Therefore in preparing case studies, researchers are encouraged to use 'whatever methods seem to them to be appropriate and practical' (Bassey, 1999, p. 69).

Yin (2009) warns, though, that it is imperative to connect empirical data to a study's initial research questions and, ultimately, to its conclusions. Consequently, he has proposed five components of case studies, which according to him, are particularly important. These are listed below and discussed with respect to the current study in subsequent sections.

1. a study's questions;
2. its propositions, if any;
3. its units of analysis;
4. the logic linking the data to propositions; and
5. the criteria for interpreting the findings.

Before discussing these components, it is worth emphasising that my decision for choosing the case study over the other strategies for conducting educational research has been influenced also, by the following observations:

- A case study investigates a **contemporary phenomenon** within its real life context (Anderson, 1998; Bassey, 1999; Yin, 2009) as in the case of this research study
- The emphasis of the research study is to gain a **contextual understanding** as opposed to achieving a certain value stance (Anderson, 1998)
- The case study approach has the advantage of extending experience through its emphasis on detailed contextual analysis, it can **encourage critical reflection** and thus ‘can be illuminating, insightful ... and exude a strong sense of reality’ (Wellington, 2000, p. 97)
- A case study is process oriented, **flexible and adaptable** to changing circumstances (Anderson, 1998)
- The research study is **bounded by time** – whilst student participants are still enrolled, **and context** – secondary school (Yin, 2009)

### 3.4.1 Research questions

Bassey (1999) has described research questions as ‘the engine which drives the train of enquiry’ (p.67). According to him the research question:

... should be formulated in such a way that it sets the immediate agenda for the research, enables data to be collected and permits analysis to get started; it should also establish the boundaries of space and time within which it will operate (Bassey, 1999, p.67).

Research questions are thus central to a research study. For, they provide the focus for research, state the purpose of the research and guide the researcher through the process of the research (Matthews, 2010). Without them, Bassey (1999) argues, that the research ‘journey’ will be slow and chaotic.

Recognising the importance of research questions to the research process, I formulated, based on the gap recognised in the literature on Emotional Intelligence and VLEs as well as my own professional experiences and interests, the following key research question:

- How should a VLE intended for secondary school students be designed in order for it to support Emotional Intelligence?

The following sub-questions which are implicit to the key research question were also formulated:

- What should be the content of the VLE?
- How (in what ways) should we work within the VLE so as to develop students' Emotional Intelligence?

In Chapter 1, it was stated that the current research builds upon an Institution Focussed Study that examined teachers' views about Emotional Intelligence and their opinions on how VLEs should be used in order to accommodate some of the Emotional Intelligence practices that underpin the practice of excellent classroom teachers. It was mentioned then, that the key themes generated from that study included using reflective journals, videos, forums and creating opportunities for students to respond in an affirmative manner to others' comments. On the basis of those findings the following research question was also considered for this research study:

- How does the use of VLE tools such as videos, forums, tests and tools for leaving feedback impact upon students' Emotional Intelligence and classroom ambience?

### **3.4.2 Research propositions**

Whereas research questions help the researcher to capture what he or she is interested in and the possible methods to use, Yin (2009) asserts that those questions do not point to the things that need to be examined within the scope of the study. A research proposition on the other hand, reflects an important theoretical issue and points to the direction where the researcher should be looking for relevant evidence (Yin, 2009). For this reason, the development of



propositions is perceived as key to the success of a case study. Hence, Yin (2009) asserts that ‘the more a case study contains specific questions and propositions, the more it will stay within feasible limits’ (p. 29).

In addition to the research questions, the following propositions were made for this research study:

- To make the use of videos, forums, tests and tools for leaving feedback prominent features of the school’s VLE
- To encourage the use of those VLE tools across the school
- To examine how the tools should be used in order develop students’ Emotional Intelligence
- To examine the extent to which using each tool impacts upon students’ Emotional Intelligence
- To examine how the tools work together to help develop Emotional Intelligence when students work in online environments as well as during face-to-face interactions

### **3.4.3 Unit of analysis**

The unit of analysis defines the case. It may be an individual, a group, an organisation, a community, a project, a relationship or decision (Yin, 2009). The unit of analysis therefore represents the object or material under study. In other words, the object for which relevant information is being collected. According to Patton (2002):

The key issue in selecting and making decisions about the appropriate unit of analysis is to decide what it is you want to be able to say something about at the end of the study (p. 229).

Since this research study sought information about my school’s VLE and how it may be adopted in order for it to support Emotional Intelligence, the primary unit of analysis in this case, was the school’s VLE. The information required about the VLE (unit of analysis) was

nonetheless, obtained from certain individuals and groups who had been purposefully selected (see section 3.5) due to the knowledge they possessed about the VLE and their experiences in relation to using it. Therefore, I was interested in how the use of particular VLE tools impacted upon the actions of such individuals and groups within the classroom. The classroom environment thus represented a second unit of analysis, referred to by Yin (2009) as the 'embedded unit of analysis' (p. 46).

Yin (2009, p. 46) has identified four types of designs for case studies: single-case (holistic) designs, single-case (embedded) designs, multiple-case (holistic) designs, and multiple-case (embedded) designs. For this research study, the design used was the single-case (embedded). It involved the examination of a single case (VLE) within one context – one school. Introducing embedded units of analyses however, added significant opportunities for extensive analysis. Unlike a holistic design which requires that attention is paid to 'only the global nature' of a research study (Yin, 1989, p. 49), the embedded design allows for the examination of subunits. Therefore, as Yin (2009) stipulates, insights into the single case were enhanced. Furthermore, this approach ensured that the research study remained focused, and that the likelihood of the planned research strategy undergoing disruptive changes was minimised. With regards to this type of case study design, Yin (2009) warns also, that in order not to ignore the holistic aspect of the case, the embedded unit of analysis should not be given too much attention. This advice was adhered to throughout the study.

#### **3.4.4 Linking data to propositions and criteria for interpreting findings**

As indicated in earlier sections, my ontological and epistemological stance for this research study approximates closely to those that underpin constructivism. As far as researchers adopting a constructive stance are concerned knowledge is socially constructed by people who are active in the research process and that data, interpretations and outcomes are all rooted in contexts (Mertens, 2007). Therefore, in constructivism, achieving external validity, that is, generalising findings beyond the immediate case is not really one of the goals of a research study. This in turn, means that, case study analysis is independent of the use of

statistics. Rather, its goal is to identify and address rival explanations for one's findings (Yin, 2009).

The strategy for analysing data obtained from this research study was underpinned by qualitative research procedures involving coding, thematic delineation and the development of individual profiles about the VLE tools that were being examined. (Tashakkori and Teddlie, 1998). Detailed critical write-ups about how each VLE tool may be used to support Emotional Intelligence were made. Although these write-ups were fundamentally descriptive, they were useful in helping me to familiarise with the unique aspects of both the unit of analysis (the school's VLE) and the embedded unit of analysis (classroom environment). This approach to analysing case study data is referred to by Ayres et al. (2000, p. 871) as 'within-case' analysis, and is useful for the development of clear chains of evidence. One of its benefits is that it makes it possible for the researcher and reviewers to track data to their sources, thereby providing them with opportunities to assess the logic used to assemble interpretations (Mertens, 2007). More details about the logic linking the data collected in this research study to the propositions and the criteria for interpreting the findings are presented in Chapters 4 and 5.

### **3.5 Selection of research sample**

The following groups of people were depended upon as participants for the research study: teachers, teaching assistants, students and Content Developers. A non-probability sample comprising 10 teachers (Table 2) were purposefully selected to be key informants. These teachers were chosen because they had previously been identified by their departments as lead teachers (champions) with regards to the use of the VLE.

Designation	Gender	Age	Teaching years	Subject
Assistant Head Teacher	F	51 - 55	21 – 25	Design Technology
Head of Department	M	56 - 60	11 – 15	ICT
Head of Department	F	31 - 35	6 – 10	Science
Head of Department	F	31 - 35	1 – 5	Music
Head of Department	F	26 - 30	6 – 10	Religious Education
Main scale teacher	F	51 - 55	11 -15	English
Main scale teacher	M	36 - 40	6 – 10	Maths
Main scale teacher	M	26 – 30	1 – 5	Geography
Main scale teacher	M	26 – 30	1 – 5	History
Main scale teacher	F	21 - 25	1 – 5	Science

**Table 2: Showing some information about teachers who were interviewed**

Considering that most teenagers nowadays tend to have more experience than their teachers in the use of modern technologies (Campbell and Scotellaro, 2009; Limniou and Smith, 2010), students were also included as participants. This enabled me to hear their views in relation to what the VLE should look like in terms of colour schemes and fonts, as well as what tools they would prefer to use. Also, students’ views were elicited about ways to work within the VLE and how the use of certain VLE tools impact on their emotions. Moreover, I am in agreement with Mazzone et al. (2008) who have asserted that including students in the designing of learning technologies helps to minimise the skill and knowledge differentials between designers and users. After all, why should a resource intended for use by students be designed and built by adults who may be far from knowing what the students need from the technology? Therefore, Druin (2002) for example, advocates the inclusion of students in the design of new technologies for teaching and learning by asserting that students can contribute to such projects as users, testers, informants and/or design partners. That said it must be

emphasised that in the development VLEs for learning, teachers and TAs are more likely to be experts on the desired contents whilst students may advise on the most appealing elements of the VLE.

Tables 3, 4 and 5 below show the number of students in the school and the number of students included as participants stratified by year group. It can be seen from Table 5 that a stratified sample of 150 students was chosen for the current research. This means that it was possible to gather enough data to work with whilst eliminating the challenges associated with working with all 607 students. Using a stratified sample of 150 students also helped in gaining access to the opinions of all the age groups represented in the school thereby making the findings representative of the context. The context of the research study is a girls' school and that is why the sample is not stratified by gender. It was stratified by ethnicity because the extant literature indicates that not much has been done about ethnicity within the topic area. It also worth noting, that although all 150 students were expected to complete the questionnaires, not all of them were invited to participate in the focus group interviews since that would have led to too many focus groups being used in a study constrained by time and resources. The students (50-70) who participated in the focus group interviews were purposively selected from the stratified sample of 150, and were drawn from classes taught by the participating teachers. Their selection was therefore on the premise that they were taught by at least three of the teachers.

	Year 7	Year 8	Year 9	Year 10	Year 11	TOTAL
Asian	3	5	8	6	5	<b>27</b>
Black African	37	36	48	41	35	<b>197</b>
Other Black	14	18	8	13	10	<b>63</b>
White British	33	23	29	34	24	<b>143</b>
Other white	19	17	20	20	22	<b>98</b>
Mixed background	19	17	15	12	16	<b>79</b>
<b>TOTAL</b>	<b>125</b>	<b>116</b>	<b>128</b>	<b>126</b>	<b>112</b>	<b>607</b>

**Table 3: Showing the number of students in each year group**

	Year 7	Year 8	Year 9	Year 10	Year 11	Total
Total in sample	31	29	31	31	28	<b>150</b>

**Table 4: Showing the number of students from each year group to be used in sample.**

	Year 7	Year 8	Year 9	Year 10	Year 11	TOTAL
Asian	1	1	2	2	1	7
Black African	9	9	12	10	9	49
Other Black	3	5	2	3	3	16
White British	8	6	7	8	6	35
Other white	5	4	5	5	5	24
Mixed background	5	4	3	3	4	19
<b>TOTAL</b>	31	29	31	31	28	<b>150</b>

**Table 5: Showing the research sample (students) stratified year group and ethnicity**

TAs were included in the research study because they usually follow less able students to all of their lessons. As a result they tend to have closer associations with such students and often have a thorough understanding of what needs the students have in order to support their learning across the different subjects.

The inclusion of teachers, TAs and students in the research study was a useful thing to do because it afforded opportunities to draw upon the opinions of all stakeholders who are directly involved in the teaching and learning process. Hence, as expected by researchers such as Hove and Corcoran (2008), and Trinick (2007), the VLE will be driven by pedagogy as opposed to technology. Besides, it can be expected that the VLE will be embraced by a

majority of the members of the school's community, thereby facilitating its widespread adoption, as well as the quality of learning that will take place within it. Two Content Developers were included as advisors in relation to the technological aspects of the VLE.

### **3.6 Choice of data collection methods**

There is no doubt that researchers are presented with a variety of data collection methods. However, as 'there is no single prescription of which data collection instruments to use' (Cohen *et al.*, 2007, p. 181), it is imperative that a researcher considers carefully issues relating to the rationale behind his/her choice of methods. This means that the researcher must decide, for example, whether or not the methods chosen for the given research study are the most appropriate (Casey, 2006). This in turn raises issues about the validity of the methods to be used for the given inquiry; for the validity of a study is a measure of the extent to which the methods used enables the researcher to answer the research questions; by measuring or describing what it is supposed to measure or describe (Bell, 2005).

Denscombe (1998), summarises the idea of validity by asserting that a data collection method is said to be valid if the data obtained from using it are 'deemed accurate, honest and on target' (p. 241). Bell (2005) has suggested further that any procedure adopted for collecting data must also be critically examined to assess the extent to which it is likely to be reliable. According to her, reliability refers to the extent to which 'a procedure produces similar results under constant conditions' (p. 117). Thus, it may be argued that the notion of reliability is synonymous to consistency and accurate representation of results or findings and hence the credibility of a research study (Scaife, 2004). Details of the steps taken to ensure the validity and reliability/credibility of this research study are provided in section 3.8.

Having been convinced that case study research was the most appropriate research strategy to adopt, I reviewed the literature again in order to ascertain which methods to include. From a



constructivist point of view Costley et al. (2010) have remarked that ‘methodological approaches favour dialogue and hermeneutics, and there is a strong drive towards achieving authentic reflections of participants’ subjective reality’ (p. 84). Hence, the methods I considered as being most appropriate for this research study were: the use of questionnaires (mainly open-ended), interviews and focus group discussions. I arrived at the decision to use the chosen methods by first examining some of the philosophical issues that underpin a research study of this nature. For example, the ontological and epistemological bases of the research study were re-examined.

In considering the ontological basis, I questioned my beliefs about the nature of the things I intended to investigate (Eisner, 1993). I was convinced that, although it is possible to discover a kind of reality that underpins practices within my school, that reality – whatever it was – was likely to be a result of the ‘social interaction’ (Wilson, 2009) amongst the people within the school, their personalities as well as the culture of the school as a whole. This is because, as Pring (2000) suggests, people in the same social and cultural context tend to reach a consensus over the values which shape the goals, methods and interpretations of a research study over a period of time.

I considered the epistemological issues relating to the kind of knowledge that could be acquired about any common realities that may be shared within the school (Taber, 2009) as well as the relationship between me as the researcher and the knowledge that I sought (Mertens, 2007). Thus, I questioned myself about how I could conduct studies into a culture that I am part of without affecting the reliability and validity of the study. Two main things became apparent to me: First, as a member of staff within the context being studied, I could not completely detach myself from the study. Second, participants may hold different assumptions about what they perceive to be ‘real’ within their own classrooms and across the school. Consequently, I was convinced that the methods chosen were the most appropriate if I were to do justice to the constructivist stance that I had chosen to adopt.

This quote from a Chris Argyris interview summarises to a very large extent my philosophical stance and reasons for using the methods indicated:

If you're (sic) seen as a researcher who is helping, you obtain data and results that are different from those you obtain when you are seen as an objective, detached scientist. Both approaches produce results and both may produce distortions, so one is not obviously better. However, you have a better probability of identifying and accounting for such distortions if you are an involved helper, if people constantly confront you, asking what you are doing, and if they don't see you detached (Argyris, 1981, p. 416).

### **3.6.1 Data collection method 1 – Questionnaires**

Primarily, using a questionnaire for this research study was based on the principle that it gives all participants access to the same standardised questions and hence makes it easier for researchers to identify trends in the responses given (Munn and Drever, 1999). Using questionnaires for this research study also meant that respondents could complete the questionnaire in their own time. Indeed, the use of questionnaires is often associated with the quest for objectivity. It is not surprising therefore, that it is mainly associated with research studies adopting a positivist stance.

The use of questionnaires did not undermine the constructive stance that was adopted for the current research. This is because the open-ended questions used in the questionnaire required reflective accounts from individual respondents and hence allowed for their subjective views (see section 4.2.3). As a result, it was possible to obtain in-depth data relating to the questions asked (Cleaves and Toplis, 2008). Also, the use of questionnaires in the current research offered the respondents an opportunity to express their opinions in a way that enabled them to maintain anonymity. That, I believe, helped in ensuring that the chances of obtaining honest responses were improved thereby adding to the credibility of the study.

### 3.6.2 Data collection method 2 – Interviews

In addition to the questionnaires, interviewing was used as a second method. As Goleman et al. (2002) assert, in attempting to uncover the emotional reality of a team, one must listen ‘for what’s [sic] really going on in the group’ (p. 237); it is by so doing that one can understand what team members are feeling. Further, interviewing was chosen as a research method in this case in order to triangulate the findings from the questionnaire responses (Bell, 2005). This way it was possible to check if the same things would emerge from the different perspectives and thus enabled me to confirm or challenge the findings of one method with those of the other (Laws *et al.*, 2003).

The semi-structured approach for conducting interviews (Denzin and Lincoln, 1994; Walliman and Buckler, 2008) was adopted in the current study for a number of reasons. In the first instance, this approach allowed me to ask follow-up questions in situations where clarification was needed from the respondents. Adopting this method of interviewing also allowed me to establish the participants’ understanding of key terms and to access their stock of knowledge about the issues being examined (Denscombe, 1998) in a relatively open situation devoid of the ‘tensions’ which can be associated with a more standardised approach.

Bearing in mind that interviews have the tendency of yielding very subjective data (Cohen *et al.*, 2007), I tried to ensure the reliability of the interview data by asking each respondent the same key questions. Critics of this approach may ask the question: if you want to ask the same questions to everyone why not use a questionnaire? Indeed, this question came to my mind when I was considering the use of interviews as a method for this research. However, the key factor that underpinned my decision to use this approach is the fact that during a face-to-face interaction, the researcher is offered the opportunity to capture tacit information (Bell, 2005) – something that I believe can be lost when questionnaires are used in research. In addition, I gained further impetus to use this approach as a result of Denscombe’s (1998) suggestion that, the use of interviews is justified in research studies such as this one, where

the researcher wishes to investigate emotions, experiences and feelings as opposed to straight forward factual matters.

Altogether, 10 individual interviews were conducted with 10 teachers (Table 2), each being a 'VLE Champion' within his/her department. The interviews lasted between 20 to 50 minutes and took place in the interviewees' offices or classrooms. The timeframe of 20 to 50 minutes was chosen because lessons are 50 minutes long in the school. Therefore, it was possible to schedule the interviews for times when an interviewee and I were both free from teaching responsibilities. Also, I chose to conduct the interviews in the interviewees' classrooms or offices because I assumed that they would be more comfortable in such environments. Besides, that meant that it was easier for interviewees to access any extra information that they wanted to share, such as information on their computers, planners or classroom displays.

As a requirement each interviewee was asked to trial the use of at least two of the following VLE tools a few weeks prior to the interview: forum, videos, test tools or tools for leaving feedback. Furthermore, they were asked to observe their students' behaviours during subsequent lessons and particularly to look out for any changes in relation to Emotional Intelligence attributes such as self-awareness, self-regulation, motivation, collaboration and relationship managements. When working within the VLE (for example in a forum), interviewees were asked to look out for how students responded to each other's questions, the language used, the extent of collaboration between students and the value students attached to the support they had received from their peers. Interviewees were also encouraged to keep notes of their observations where possible and to bring such notes to the interviews.

During the interviews I asked interviewees to talk me through their observations in relation to using the VLE tools prescribed and/or to give me the notes they had made if they preferred. To make it easier for me to identify trends in the responses obtained, each interviewee was asked the following key questions:

1. What does the term Emotional Intelligence mean to you?
2. In what ways do you think the school's VLE should be used in order for it to help in developing students' Emotional Intelligence?
3. Which VLE tools did you trial?
4. In what ways (if any) do you think that the VLE tools encouraged or supported:
  - i) Reflection
  - ii) Self-awareness/ self-regulation
  - iii) Empathy
  - iv) Trust
  - v) Motivation
  - vi) Collaboration and relationship management
5. In what ways (if any) did the use of collaborative tools help in
  - i) Fostering trust/good relationships?
  - ii) Establishing a positive classroom ambience in subsequent lessons?
6. Please talk me through any particular observations you made whilst trialling the suggested tools.
7. Is there anything else you would like to ask or add?

Generally, the interviews consisted of four interrelated stages. The first of these was to greet the interviewees; to explain to them (again) the purpose of the interview; to reassure them that their identity and the information they provided were going to be treated confidentially and anonymously (Sapsford and Jupp, 1998); and to seek their permission to record the interviews. In my opinion, these were important things to do in order to ensure that interviewees were comfortable with the interviewing process, and also, to encourage them to provide accurate accounts. The aim of the second stage was to collect data relating to the research questions and propositions. For this, questions 1-5 above were used as a guide. Stage three (question 6) was used to encourage critical reflection and to offer interviewees the opportunity to share their experiences and observations in relation to using the VLE tools. Stage four (question 7) was to give interviewees the opportunity to ask any other questions pertaining to the study; for them to share their thoughts and to bring the interview to a close

before thanking them. Further details about the interviews and how they were analysed are provided in section 4.2.1.

### **3.6.3 Data collection method 3 – Focus group**

The third method I chose to use is the focus group interview. Focus groups, according to Kitzinger (1995), ‘are a form of group interview that capitalises on communication between research participants in order to generate data’ (p. 299). Wilson (2009) asserts that focus groups are ‘useful for revealing, through interaction, the beliefs, attitudes, experiences and feelings of participants’ (p. 90). In focus group interviews participants are afforded the opportunity to interact more with each other rather than the interviewer. As a result, Cohen et al. (2007) posit that this method of interviewing allows participants’ views to emerge. The result, therefore, is that the data obtained tends to be representative of the group rather than an individual view. Despite these benefits, Cohen et al. (2007) have noted that the group dynamics in a focus group may lead to non-participation by some members and dominance from others. Hence, they have suggested that the researcher in this case, must endeavour to ensure that the group has homogeneity of background in the required area and that each participant has something to say and feels comfortable enough to say it. Moreover, Kitzinger (1995) has noted that the presence of other participants can compromise the confidentiality of the sessions.

Wilson (2009) puts it succinctly by asserting that:

Focus groups can provide an insight into multiple and different views and on the dynamics of interaction within the group context, such as consensus, disagreement and power differences between the participants (p. 90).

In other words, in addition to everything else that have been said about this method of data collection, focus groups interviews, also enable researchers to access for example, the

humour, arguments and teasing that people use in their day to day interactions. This, according to Kitzinger (1995, p.299) is useful because:

- Everyday forms of communication may tell us as much if not more, about what people know or experience
- People's knowledge and attitudes are not entirely encapsulated in reasoned responses to direct questions

In addition to these, participants in a focus group can become empowered as a result of their participation in the process of examining an important aspect of a culture to which they belong. For these reasons and the fact that the key characteristics underpinning this research study relate to group dynamics – self regulation, empathy and relationship management – I was convinced that using focus groups as a method was appropriate for the research study.

Views were elicited from 10 focus groups each comprising 5-7 students. Each group met separately for between 30 to 50 minutes to deliberate on issues relating to the research questions. The sessions took place in a comfortable meeting room within the school and participants were provided with refreshments. Due to the ages of the participants, a teaching assistant (TA) was requested to sit in each session as a non-participant observer – primarily, for safeguarding reasons and also, because TAs usually follow some of the students to their lessons in order to offer them support and guidance. At the start of each session, participants were reminded of the aims of the research study, issues relating to confidentiality, their roles and right to withdraw. Also, they were encouraged to discuss amongst themselves rather than seek my opinion on the questions posed. This means that, for most parts of the sessions I was able to take a back seat role, thereby allowing me to engage in 'structured eavesdropping' (Kitzinger, 1995, 301). I only got involved when the participants needed clarification about the questions asked or when I felt that they needed to probe further.

Each focus group was provided with A1 sheets on which their 'scribe' wrote down 'agreed' opinions about questions asked as well as major differences in opinions. The following

questions which groups were required to deliberate upon were written on cards and given out on arrival at the sessions:

1. How does watching a topic-related video before/after lessons affect your emotions in the classroom?
2. How does topic related-videos provided before/after lessons affect the quality of classroom discussions?
3. Describe how the use of VLE tools such as forums, videos and tests impact on your:
  - i) Self confidence
  - ii) Ability to reflect on tasks
  - iii) Willingness to join in group discussions
4. How do you feel about the responses offered by your peers in online forums?
5. To what extent does the use of VLE forums and discussion encourage you to become empathetic towards others?
6. Describe ways in which the VLE may be used to foster good relationships.

In addition to the 10 student focus group discussions, the research study also relied upon information obtained from staff groups. During a VLE training session for staff, all teachers and TAs in the school were put into focus groups of 4 or 5 in order to elicit information about their experiences and views about how they have used the VLE or how they think the VLE should be used to aid the development of students' Emotional Intelligence. This training session lasted one hour and fifteen minutes, with 30 minutes being dedicated to focus group discussions. The strategies adopted for the analysis of focus group interviews are provided in section 4.2.2.

### **3.7 Ethical considerations**

Researchers such as Hopkins (2002), Bell (2005), Mercer (2007) and Smyth and Holian (2008) have emphasised the need to pay close attention to ethical principles guiding a research activity. For research studies such as this one that is very deeply embedded in an



existing social organisation, Hopkins (2002) warns that failure to work within the general procedures of the organisation may jeopardise the process of involvement as well as existing valuable work. Consequently, the extant literature suggests that issues relating to confidentiality, anonymity, respect for persons who are subjects of enquiry and appropriate ways of working with participants must be given due consideration (Hopkins, 2002; Opie, 2004; Sikes, 2004) in educational research.

For this research study I ensured that due consideration have been given to ethical issues by undertaking the following:

- Following the guidelines proposed by the Brunel University Ethics Committee and consequently completing an ethics application form
- Seeking permission from the Head Teacher of my school (Bogdan and Biklen, 2003; McNiff *et al.*, 2003)
- Seeking written consent from all participants. Further, all participants were informed of their right to withdraw from the research at any point (Opie, 2004). They were also assured that their responses will be treated anonymously (Sikes, 2004)
- All participants were given a document that briefly describes the objectives of the study as well as the potential outcomes of the study
- All questionnaires were anonymously administered using online survey tools
- Questionnaire responses were treated anonymously – there was no need for respondents to disclose their identity

In addition to these, I familiarised myself with the tensions associated with undertaking insider research (Hockey, 1993; Smyth and Holian, 2008). Indeed, undertaking research studies of this nature can offer enormous benefits with regards to learning and improvement of organisation practices (Smyth and Holian, 2008). This is due to the fact that the researcher in this case is offered distinct advantages in the form of access and prior knowledge of the organisation within which the research is to take place (Labaree, 2002). However, the fact that this kind of research involves studies within an organisation to which the researcher belongs also poses a number of challenges. Hockey (1993) for example, points out the

difficulties associated with the blurring roles of the researcher and the researched by suggesting the question: ‘whom do you enter the field as?’ – A researcher, a friend or both?

Smyth and Holian (2008, p.39) have argued that the blurring of roles ‘may constrain information, behaviour and relationships’ in both the researcher and the researched. Mercer (2007) on the other hand, raises the issue of over-familiarity. She argues that this may lead to certain assumptions and facts being taken for granted and thereby undermining the credibility of the study. Finally and perhaps most importantly, Smyth and Holian (2008) have warned that conflicts or risky implications may occur as unexpected information arise. Hence in considering the ethical issues relating to this research, I have been careful not to undertake any actions that will undermine or bring harm to the participants of the research, the organisation and myself (Denscombe, 2010). For example, I have ensured that every aspect of the research study presented in this thesis has been depersonalised. Ensuring instead, that what is reported focuses on strategies, methods and cultures as opposed to the individual (Woods, 2002).

### **3.8 Ensuring validity and reliability**

In section 3.6 the notion of validity and reliability in relation to educational research was mentioned. The terms were defined and their purposes briefly discussed. That section however, did not provide any indication of the steps taken in this research study to ensure the reliability and validity of the research process and findings. Such information is provided in the following sections.

Undoubtedly, reliability and validity are mainly tools of a positivistic epistemology (Golafshani, 2003). Nevertheless, I am of the view that for qualitative research it is important to define the measures one has taken to ensure the validity and reliability of findings. This way, we can be sure that research studies are credible (Wilson, 2009) and that

‘what we discover is the genuine product, and not tainted by our presence or instrumentation’ (Woods, 2002, p. 49).

### **3.8.1 Validity**

According to Tashakkori and Teddlie (1998), much of the controversy surrounding research findings lies in researchers’ inability to efficiently and unambiguously answer questions relating to reliability and validity. This, according to them, results from the fact that most attributes in educational, social, and behavioural research are not directly observable. For example, Tashakkori and Teddlie (1998) argue, that ‘it is not possible to directly observe the degree of correspondence between a variable (such as creativity) and the obtained measure’ (p. 80). Consequently, they assert that to make judgements about the validity of measurements, the researcher must define the constructs in an observable manner. In other words, before any data are collected, the theoretical meaning of the “construct” (in this case Emotional Intelligence) must be defined in clear form. This was one of my reasons for asking respondents about their views in relation to Emotional Intelligence in the exploratory study (IFS) and also during interviews. The consequence of this action was that it was possible to assess participants’ understanding of the key terms associated with the study and to subsequently, approach them from their own point of view.

The extant literature proposes several ways by which the validity of a research study may be improved. These include content validity, concurrent validity, predictive validity, construct validity (Tashakkori and Teddlie, 1998), ecological validity (Schmuckler, 2001) as well as internal validity and external validity (Wilson, 2009; Yin, 2009). Selvaruby et al. (2008), add to the discussions on the validity of qualitative research studies by asserting that in order to add rigour to a research study issues relating to context-based validation, theory-based validation, response validation, criterion-related validation and consequential validation must be addressed.

In considering the validity of this research study, I adopted the criteria suggested by Selvaruby et al. (2008). This is because, in my opinion, it is more elaborate and also encapsulates the other types of validation identified. Table 6 below shows the questions and/or tasks that were critically examined in order to ensure that due recognition were given to the validation process.

Context-based validation	Are the aims of the research study consistent with its context? What are the constraints?
Theory-based validation	Are the methods chosen supported by the literature? Do all the tasks that are to be undertaken have sound theoretical basis? In other words, examine what the extant literature says about Emotional Intelligence in relation to VLEs and how the current study fits in. Compare findings with existing theory.
Response validation	Use a sample that is representative. Ensure that questions used/asked are adequate and appropriate – <b>internal validity</b> . Also, make sure that all questionnaires are piloted. Follow-up on incomplete responses. Use exploratory interviews to examine respondents understanding of key terms in order to ensure that participants are approached from their perspective. By using a triangulation of methods examine the findings obtained from using different approaches to see if the different methods are giving the same responses. Also, ask some key informants to review draft case study report – <b>construct validity</b> (Yin, 2009).
Criterion-related validation	Do not impose preconceived ideas by using a predefined framework with which to code the data obtained. Let other people (at least two) code the same data. Examine whether or not the same themes arise – if not, probe further - <b>construct validity</b> (Yin, 2009). This action should also help in ensuring that the research approaches and hence its findings are reliable.
Consequential validation	Examine the impact of the different tasks on stakeholders. For example, examine the effect of introducing new characteristics to the VLE on students'/teachers' motivation to use the VLE. This may be achieved by for example, comparing the total login statistics prior to and after embedding into the VLE qualities that promote Emotional Intelligence.

**Table 6: Showing how validation was ensured in this study**

### **3.8.2 Reliability**

Paying attention to the reliability of a research study helps to ensure that errors and biases are minimised (Yin, 2009). For case study research in particular, researchers such as Bassey (1999) and Yin (2009) have suggested that the inquirer must document all procedures followed in such a way that it is possible for an auditor to follow the research stage-by-stage, and therefore, be able to certify that any conclusions drawn are justified. In addition, Yin (2009) suggests that the steps taken in a case study must be made as operational as possible. He subsequently proposes the use of a case study protocol. The case study protocol refers to set of guidelines which can be used to structure and guide a research study. Yin (2009) adds that, the case study protocol is ‘a major way of increasing the reliability of case study research’ (p. 79). Its benefits include forcing the researcher to consider all the issues relevant to their research study, by encouraging them to specify in detail how they intend to answer their research questions. Thus, enabling them to reconsider their choice of data collection methods and how they may deal with the outcomes of their research study.

#### **3.8.2.1 The case study protocol for this research**

The case study protocol followed in this research study is shown in Table 7 below. It provides systematically, important trails followed (to be followed by an auditor) in the research activity and the reasons for them.

Section	Item	Purpose
<p><b>A.</b></p> <p>Introduction to the research and purpose of the protocol</p>	<p><b>1. Research questions:</b></p> <p>How should a VLE intended for secondary school students be designed in order for it to support Emotional Intelligence? <u>(see section 3.4.1)</u></p> <p><b>2. Theoretical framework</b></p> <p>Refer to theories of learning (<u>Chapter 2</u>) in particular to the work of Goleman (1995, 2008), (<u>section 2.2 - 2.5</u>)</p> <p><b>3. Case study protocol</b></p>	<p>To introduce participants and auditors to the research study, its propositions as well as goals.</p> <p>To provide the theoretical underpinning for the research study.</p> <p>To provide a standardised agenda for the study. Aid reliability of study.</p>
<p><b>B.</b></p> <p>Data collection procedures</p>	<p><b>1. Interview</b></p> <p>Staff interviews (x 10). Interviewees should be VLE champions (or regular users) within their departments and should have used the following tools with their classes prior to interviews: forum, test, videos, and feedback. This should be semi structured. Venue to be negotiated with interviewee.</p> <p><b>2. Focus group</b></p> <p>a) 10 Focus groups comprising 5 – 7 students from:</p> <ul style="list-style-type: none"> <li>• Junior AFL.</li> <li>• Junior leadership team.</li> </ul>	<p>To establish the impact the adoption of VLEs have on students' Emotional Intelligence from teachers' perspective – inquire about collaboration, self-esteem, relationship management, classroom ambience etc.</p> <p>Also inquire about other ways to work within a VLE that can help develop Emotional Intelligence.</p> <p>Same as above except from students' point of view.</p>

	<ul style="list-style-type: none"> <li>• Year 10/11 (4 groups)</li> <li>• Year 7-9 (4 groups)</li> </ul> <p>All discussions to be held in training room.</p> <p>b) All teachers and TAs in groups of 4/5 (discussions in main hall)</p> <p><b>3. Questionnaire</b></p> <p>Staff (10 teachers)/student (150)</p> <p>Mainly open ended questions but include closed question where necessary.</p> <p><b>4. Reference to relevant documents -</b> such as lesson observation feedback, notes and comments on forums.</p>	<p>Elicit views about how to develop a VLE that supports Emotional Intelligence from the perspective of those directly involved with the teaching and learning process.</p> <p>To support or dismiss data collected from other methods.</p>
<b>C</b> Data analysis guidelines	<ol style="list-style-type: none"> <li>1. Transcribe Interviews/ focus group discussions. Using NVivo 10 software, identify common themes after coding.</li> <li>2. Code and undertake thematic analysis of questionnaire.</li> <li>3. Following guidelines offered by Yin (2009) generate: <ul style="list-style-type: none"> <li>- Individual case report.</li> <li>- Cross case report.</li> </ul> </li> <li>4. Examine data for convergence</li> </ol>	<p>To look for answers to research questions. Section 3.4.1</p>
<b>D</b> Evaluation	<ol style="list-style-type: none"> <li>1. Identify and explore rival explanations.</li> <li>2. Ask key informants to assess drafts of case study report.</li> </ol>	<p>To ascertain reliability of case study</p>
Appendix 1	Request for participation.	To invite potential participants.

**Table 7: Case study protocol - adapted from Yin (2009)**

### **3.9 Chapter summary**

This chapter has provided insights into the research methodology applied to the current research. It started with the definition of some of the key terminologies used within the chapter and the next. The philosophical issues pertaining to educational research were subsequently discussed. In particular, issues pertaining to how the choice of research strategy may be influenced by a researcher's ontological, epistemological and methodological stance were provided. Further to this, my stance as a researcher was discussed as well as an in-depth description of the case study strategy that was adopted for this research study. My reasons for choosing the case study and the methods associated with the research study were elaborated upon. Also discussed in this chapter were issues relating to ethics and steps taken to ensure that a representative sample of teachers who were familiar with the VLE under discussion, TAs and students were used in the research study. Finally, the measures taken to ensure that the research process and its findings are valid and reliable have been outlined and discussed. The next chapter presents the data collected from the research study and their analyses.



## Chapter 4

### Data analysis and findings

#### 4.1 Introduction

Building upon the research methodology this chapter presents the analysis of data collected in the research process. It aims at identifying and consequently projecting the strategies, methods and cultures at the focus school which enables its VLE to be used to support teaching and learning in addition to developing students' Emotional Intelligence. The chapter helps to provide meaning and purpose to the data collected throughout the research study and by so doing gives more impetus to this original contribution to the research area.

The first section presents a brief discussion of the strategies used in analysing the data collected in the current research. After this the ideas that emerged from the interviews, focus group discussions and questionnaires are compared and contrasted. In order to achieve a holistic viewpoint, the data collected from the research study were initially put into two categories: first, the data obtained from staff and second, those obtained from students. Describing and summarising the data obtained from staff and students separately was necessary for within-case analysis (Ayres *et al.*, 2000). This is because it helped in familiarising with individual aspects of the research and therefore allowed unique patterns of each aspect of the study to be identified prior to the cross-method comparisons that followed it. The chapter concludes with the in-depth analysis of the themes resulting from the data analysis.

## **4.2 Strategies for analysing the data collected**

### **4.2.1 Analysing the interviews**

Ten teachers were interviewed in order to explore their perception of how the use of Fronter VLE tools support the development of students' Emotional Intelligence. About a month prior to the interviews, the teachers were encouraged to trial the following VLE tools: use of videos, forums, tests and tools for leaving feedback on students' work. They were also encouraged to make notes about any interesting observations they had made for discussion during the interviews. In order to give the teachers an idea of what to look out for, they were provided with a pro forma (Appendix 2) to record their observations.

All interviews were transcribed by the researcher in order to enhance familiarity with the data and to ensure that interview transcripts were as accurate as possible. As noted by Cohen et al. (2007, p. 365), 'the potential for massive data loss, distortion and reduction of complexity' can occur when interview data are transcribed. This, according to Cohen et al. (2007), results from audiotapes filtering out important contextual factors such as visual and nonverbal aspects of an interview. Therefore, transcribing the interviews personally served as an important prelude to data analysis as it was possible to identify more easily – in conjunction with interview notes – with the tone of voice of the interviewees and where they were hesitant or confident, enthusiastic or bored.

Interview transcripts were subsequently emailed to interviewees so that they could validate them by adding to or taking away from what had been recorded. This represented the most effective means of validating interview data and it ensured that the data used in my analysis represented exactly what the interviewees had intended. All interviewees acknowledged that the transcripts were accurate although two interviewees provided further information. The revised interview transcripts were then imported into NVivo 10 software for analysis. The analysis included: identifying the words and ideas that interviewees frequently referred to, coding responses into predetermined categories, searching for patterns amongst the codes and

building a logical chain of evidence (Appendix 3). To expedite analysis, predetermined categories were used for the initial coding (Tashakkori and Teddlie, 1998). These were generated based on the IFS findings as follows:

- The response contained evidence of how interviewees used videos in the VLE
- The response contained evidence of how interviewees used VLE forums
- The response contained evidence of how interviewees used feedback
- The response contained evidence of how interviewees used test tools
- The response gave examples of the impacts of using VLE tools on students' Emotional Intelligence
- The response contained evidence of how using VLE tools impact on classroom ambience
- The response raised concerns about VLE adoption in the school

As a result of using these codes, the data collected were reduced to their essentials (Miles and Huberman, 1994). This made it possible to highlight the surface meaning of the raw data independently of any views I may have had about the underlying variables and meanings (Sapsford and Jupp, 2006). Hence, it was possible to ensure that the researcher's values and biases did not influence the research studies in ways that could have distorted the findings. The latent content (Tashakkori and Teddlie, 1998) were subsequently determined by comparing the texts within the codes and the original narratives. Thus, exploring the ideas coded at the different nodes (all references to a specific theme) and making connections between them made it possible to bring to light the significance of emerging themes (Bazeley, 2007).

The following example illustrates briefly, how the data from the interviews were coded and used to explore emerging themes: Mrs Laing, a member of the Senior Leadership Team (SLT) asserted in her interview that Emotional Intelligence in the classroom involves 'having the maturity to make decisions, having the maturity to do things wrong, having the maturity to be independent'. Ms Noble, a music teacher, also remarked that Emotional Intelligence involves the ability 'to respond to situations with a mature attitude', whilst Mr Christian

(ICT) described an emotionally intelligent classroom as one where students will be seen maturely discussing what they are supposed to be learning.

It became apparent during the data analysis that the statements above did not fit any of the predetermined categories used for the initial coding. As a result, they were coded at a new node referred to as 'maturity'. The name of the node was chosen to reflect the fact that the word 'maturity' was perceived as an emerging keyword. The surface meaning that may be derived from considering these statements, quite simplistically, is that if a person acts maturely then they are emotionally intelligent. Although such an assertion may be valid it was necessary to explore why the interviewees made those assertions and the underlying meaning – latent meaning. Otherwise, the data analysis would have been 'doomed to merely scratching the surface [sic] of the data' (Edwards and Mercer, 1987, p. 10). By paying attention to the context of the research and connecting individual statements it was possible to affirm what the interviewees implied. That, in relation to classroom behaviour and relationships, Emotional Intelligence is best perceived on the basis of students' maturity in dealing with situations and with those around them. Even so, it was necessary to then compare and connect these ideas with those generated from other nodes. Undertaking these tasks made it possible for the conclusion to be drawn that developing students' Emotional Intelligence through the use of a VLE requires that students acted maturely – cognitively and emotionally – in a forum, when giving or receiving feedback as well as in their relationships with their teachers and peers.

To substantiate claims such as this and others made throughout this chapter, analyses includes transcripts of raw speech, information about contextual activity and connections with data from other sources. By so doing, the arguments put forward have not been based solely on information from coded data. As Edwards and Mercer (1987, p. 11) posit, coded data can often be presented as a *'fait accompli'*, which results in the loss of original discourse.

### 4.2.2 Analysing the focus group discussions

As part of a whole school VLE training session all teachers and TAs were put into groups of four or five in order to discuss the extent of adoption of the VLE and to assess how the VLE may be used to support Emotional Intelligence. To aid analysis and also enable readers to distinguish between arguments put forward by the different groups, the staff focus groups have been denoted TFG:1, TFG:2, TFG:3 and so on. Altogether, there were eight such groups deliberating simultaneously. As a result, it was unrealistic to tape record the discussions. The data collected were therefore a summary of the discussions that had taken place within the groups. Thus, it was impossible to identify in most cases the individuals who had contributed uniquely to discussions. In exceptional cases – where I had captured a statement whilst ‘eavesdropping’ – a pseudonym has been included in the identification of the focus group (for example, TFG:3: Dosso) to identify the teacher to whom the statement is attributed.

Similarly, the students’ focus groups have been denoted, for example, as SFG:10: Samira. Altogether, there were ten such groups. Groups 1 to 6 comprised students in Key Stage 3 (11 – 14 years old) whereas groups 7 to 10 comprised students in Key Stage 4 (15 – 16 years old). Again, the data collected consisted predominantly of a summary of participants’ opinions as presented by the groups’ moderators. Extreme and opposing views were however recorded by moderators – often with the names of the participant(s) who held such views. Hence, the richness of the data obtained and their descriptive validity were both enhanced (Onwuegbuzie *et al.*, 2009).

With hindsight, I think that the strategy adopted in the recording of focus group data did not help in establishing the ‘degree of consensus or dissent’ amongst participants (Onwuegbuzie *et al.*, 2009, p. 5). This is because the focus group data were presented as summaries of the groups’ discussions as opposed to transcripts of the dialogue that took place. Nevertheless, by comparing and contrasting the data obtained from the different focus groups, it was

possible to assess if the themes that emerged from one group also emerged from the other groups. Hence, the validity of the strategy was enhanced (Onwuegbuzie *et al.*, 2009). To facilitate analysis, the data collected were coded using the predetermined categories described in section 4.2.1. The content of each category was subsequently analysed and emergent themes identified.

### **4.2.3 Analysing the questionnaires**

The staff questionnaire (Appendix 4) was emailed to the ten key respondents; it comprised two sections. In the first section, open-ended questions were used to obtain respondents' views about the impact of using VLE tools to support Emotional Intelligence. The second section was in the form of a four point rating scale. It comprised 16 items relating to teachers' views of how their students' Emotional Intelligence abilities were affected by the adoption of the VLE tools.

The student questionnaire (Appendix 5), on the other hand, was used to assess students' views about how the use of videos, forums, feedback and online tests impacted upon their confidence, self-esteem and ability to collaborate. This comprised closed and open-ended questions. Like the staff questionnaire, it was anonymously administered via online tools to the 150 students who took part in the research study.

Whereas all 10 (100%) teachers responded to the staff questionnaire, the response rate for students was 88.7% representing 133 of the 150 participants. Staff responses were initially analysed separately from the students' responses. The process involved grouping all answers to a question, reading through answers to open-ended questions to identify common themes and then comparing and contrasting such themes with those that had emerged from the interviews and focus groups. As a result of the data analyses, it became apparent that students' responses, like those of their teachers, indicate a favourable link between the strategic use of VLE tools and impacts on Emotional Intelligence attributes. Evidence to

support this assertion is provided in sections 4.3 to 4.6, where the data collected from staff and students are depended upon to help validate the findings of the research study.

#### **4.2.3.1 Analysing responses from the rating scales**

Primarily, the rating scale was used as a means of corroborating the responses obtained from the open-ended questions which were used in the first section of the staff questionnaire. The statements were also used to assess respondents' views about the impact of using VLE tools to support Emotional Intelligence. A four point rating scale was chosen in order to force respondents to show their agreement or disagreement with particular statements. Avoiding the use of neutral or central points was thus necessary for ensuring that participants gave the statements more thought, thereby making their expressed points of view more accurate. Although it may be argued that this approach to data collection can lead to respondents who are genuinely ambiguous about certain dimensions being forced to report inaccurately what they believe, I was convinced that this was the best approach to use given my knowledge of the context of the current research. In addition, all the respondents are regular users of the VLE therefore it was assumed that they would have some strong opinions in relation to the statements. Table 8 provides a summary of the opinions of the ten key respondents in relation to the statements used in the rating scales:

	<b>Strongly agree</b>	<b>Agree</b>	<b>Disagree</b>	<b>Strongly disagree</b>	<b>Rating Average</b>
1.1 Using videos in the VLE helps to boost students' confidence	10.0% (1)	<b>90.0%</b> <b>(9)</b>	0.0% (0)	0.0% (0)	1.90
1.2 Using videos in the VLE helps students to be self-aware	30.0% (3)	<b>70.0%</b> <b>(7)</b>	0.0% (0)	0.0% (0)	1.70
1.3 Using videos in the VLE helps students to self-regulate their learning	20.0% (2)	<b>80.0%</b> <b>(8)</b>	0.0% (0)	0.0% (0)	1.80
1.4 Using videos in the VLE helps students to self-regulate their emotions	0.0% (0)	<b>70.0%</b> <b>(7)</b>	30.0% (3)	0.0% (0)	2.30
1.5 Students behave better when they are confident	<b>60.0%</b> <b>(6)</b>	20.0% (2)	20.0% (2)	0.0% (0)	1.60
1.6 Low self-esteem can disrupt classroom ambience	<b>60.0%</b> <b>(6)</b>	30.0% (3)	10.0% (1)	0.0% (0)	1.50
1.7 Access to videos can encourage students to support each other	10.0% (1)	<b>80.0%</b> <b>(8)</b>	10.0% (1)	0.0% (0)	2.00
1.8 The use of videos can lead to effective communication in the classroom	30.0% (3)	<b>70.0%</b> <b>(7)</b>	0.0% (0)	0.0% (0)	1.70
1.9 Forums encourage reflection	20.0% (2)	80.0% (8)	0.0% (0)	0.0% (0)	1.80
1.10 Forums enable students to support each other	30.0% (3)	<b>70.0%</b> <b>(7)</b>	0.0% (0)	0.0% (0)	1.70
1.11 Forums help students to develop better relationships	10.0% (1)	<b>80.0%</b> <b>(8)</b>	10.0% (1)	0.0% (0)	2.00
1.12 Classroom discussions can be enhanced by online forums	<b>50.0%</b> <b>(5)</b>	<b>50.0%</b> <b>(5)</b>	0.0% (0)	0.0% (0)	1.50
1.13 Positive feedback promotes self esteem	<b>90.0%</b> <b>(9)</b>	10.0% (1)	0.0% (0)	0.0% (0)	1.10
1.14 Positive feedback promotes openness	22.2% (2)	<b>77.8%</b> <b>(7)</b>	0.0% (0)	0.0% (0)	1.78
1.15 Forums, videos, tests and feedback can encourage resilience	20.0% (2)	<b>60.0%</b> <b>(6)</b>	20.0% (2)	0.0% (0)	2.00
1.16 Forums, videos, tests and feedback can help students to form better relationships.	10.0% (1)	<b>80.0%</b> <b>(8)</b>	10.0% (1)	0.0% (0)	2.00

**Table 8: Summary of responses obtained from the rating scale questions**

The rating averages indicate that only one statement (1.4) had a mean of more than 2. Considering that the statements were rated from 1 – Strongly agree to 4 – Strongly disagree, it may be argued that respondents perception of this item falls between agree and disagree. In other words, on average, participants were a bit unsure of whether or not ‘using videos in the



VLE help students to self-regulate their emotions'. Even so, a rating average of 2.30 shows a leaning towards agreement with the statement than disagreement of it. The rating average was calculated using the formula:  $\{(n_1 \times 1) + (n_2 \times 2) + (n_3 \times 3) + (n_4 \times 4)\} / 10$ . Where  $n_1$  represents the number of respondents who strongly agreed with a statement;  $n_2$  represents the number that agreed, and so on.

The use of median instead of mean would seem to some a more appropriate descriptive statistic to use for analysis in nominal 4-category questionnaire items such as those used in the current study. Nevertheless, using the median as a measure of average also indicates that respondents agreed with all the statements, with the exception of statements 1.5, 1.6, 1.12 and 1.13 to which they strongly agreed. Thus, the argument can be made that the teachers who responded to this questionnaire upheld the belief that the VLE tools trialled can be depended upon to support the development of secondary school students' Emotional Intelligence. In particular the data obtained from the rating scale together with the other questionnaire responses and interviews seem to support the proposition that forums, videos, tests and feedback when successfully adapted within VLEs can encourage resilience (the ability to stand firm in the face of adversity – Wilding, 2010); foster the formation of good relationships; promote motivation and also aid the development of secondary school students' intrapersonal skills.

### 4.3 Findings in relation to videos

It was apparent from the interviews that using video resources within the Fronter VLE helped in boosting students' confidence and self-esteem. For example, when asked about how the use of video resources within the VLE impacted upon students, a teacher asserted:

I found that when I did ask them questions like – can you tell me about safety in the lab? They were more confident because they watched the video prior to the lesson... Having the opportunity to go back and revisit the video I think also helps to build up their confidence (Ms Smith, teacher).

The point of view expressed by Ms Smith, that the use of video resources helped in developing students' self-confidence was evident throughout the data analysis. And the fact that improved confidence resulted from the opportunity to watch a video-related topic before or after a lesson was emphasised by all the teachers who were interviewed as well as 69.9 % of students. These observations are important because they indicate that the development of students' confidence and self-esteem are central to the use of VLEs. In effect, such observations provide some answers to the research question concerning how the use of VLEs impact upon students' Emotional Intelligence.

Altogether, 7 of the 10 teachers explicitly mentioned that the opportunity to watch a video clip before or after a lesson encouraged their students to reflect on what is to be learnt or has been learnt. It emerged, that as a result of making videos about lessons available to them, students were better equipped to form their own opinions, and thus, were more able to express such opinions confidently and, 'not shying away simply because somebody else had a different idea' (Ms Noble, teacher). Furthermore, one teacher observed that as a result of:

... not springing new tasks or activities that they [students] had to do on them, they had more confidence, so therefore, the atmosphere and sort of ethos in the classroom was positive...they had all had access to the video, and so were more willing to support each other (Mrs Laing, teacher).

In effect, Mrs Laing asserted that classroom discussions were enhanced, that students respected each other's viewpoints and were more open with regards to sharing their own opinions or when asking for help. Face-to-face classroom time, she opined, became more productive, as students 'were calmer, focused and supportive'. This emphasises the argument made by Bergmann and Sams (2013, p. 24) that the use of video resources in teaching and learning can lead to 'higher student achievement and increased engagement'.

The sense of excitement and satisfaction that the teachers themselves derived from trialling the use of video resources in the VLE was encapsulated in the following statement:

I made a video of myself playing what I needed them to play on the keyboard and it was REVOLUTIONARY [emphasis]... for the progress made by the kids ... I can stand here and demonstrate [plays some notes on keyboard] but they can't see my hands and although I can put a virtual keyboard on the board, I can't try and show them fully. But with me actually videoing my own hands and giving them instructions, it totally totally [sic], literally revolutionised the way that they were working... and they knew ... No book can teach you like a person showing you where your fingers go on a guitar (Mrs Noble, teacher).

This statement, coupled with the enthusiasm with which Ms Noble talked about her experiences gives an indication of how adopting VLE technologies can positively transform traditional pedagogy. It shows how this music teacher was able to transform her teaching of one aspect of her subject and as a result was able to enhance the learning experiences of her pupils. Even though the statement does not provide evidence of how the approach impacted on her students' achievements, it can be deduced from her statement and in particular, the words 'they knew ...' that the tasks became clearer for the students. Indeed, students' understanding of tasks is likely to improve when tasks have been made clearer to them. And this can lead to better performances which in effect can lead to improved self-confidence and self-esteem.

As with the interviews, the focus group discussions showed that when teachers upload resources such as videos and PowerPoint presentations about a topic to be studied prior to

lessons, they offer their students opportunities to develop self-confidence and also the confidence to contribute to classroom dialogue. This according to the teachers is because students are able to access the resources several times. Therefore, they have the opportunity to repeat the aspects that they did not initially understand. Consequently, they have more time to consider their opinions (developing self-awareness) and therefore are more likely to be prepared for subsequent classroom discussions (Appendix 3).

It also emerged that the use of video resources offers to students a multi-sensory access to learning materials, thereby helping to promote inclusiveness and motivation for learning. In other words, unlike worksheets which provide instruction in text-only format, the use of video resources offer teachers opportunities to demonstrate or model intended learning outcomes. Teachers are also able to vary the tone of their voice, use sophisticated and/or unsophisticated language to emphasise key aspects of what is being said, as well as use visual aids in their presentations. These make it possible for students with different learning styles and abilities to be included in the learning that is expected to place. In effect, students' motivation for learning is likely to be enhanced since they are likely to engage with a learning resource that meets their academic needs. Therefore, like Coffield et al. (2004) had observed in their review of learning style models, students would be able to pick up and use new information and ideas at their own pace, and consequently develop effective learning strategies. The discussions also brought to light that apart from promoting independent learning there is the added benefit of in-depth classroom discussions. This is because students would have had at least, a basic awareness of the topic to be discussed in class, having watched a related video prior to the lesson. Therefore it was argued that 'classroom time will be maximised and discussions will flow quicker' (TFG: 1). Colleagues added that each student is more likely to be listened to carefully as everyone would have an opinion about the topic being discussed.

One focus group suggested that a positive classroom ambience is likely to be developed, as students 'would be able to see themselves as part of a team of equals' (TFG: 1). Mutual respect will thus flourish and so will collaborations. Also, anger, frustration and feelings of

isolation resulting from the inability to access what is being studied will be minimised. In effect, the classroom becomes an emotionally intelligent one where students will be ‘maturely discussing and learning about the knowledge that they should be learning’ (Mr Christian, teacher).

Some members of staff observed that the video resources can be re-used as revision tools (TFG: 1; TFG: 3; Ms Smith, Mr Johnson). This observation was strongly supported by the evidence gathered from three student focus groups. In one of the student focus groups for example, it was asserted that the use of video resources in the VLE ‘makes revision easier’ (SFG: 7). Another group mentioned that video resources are ‘very helpful for revision and going over old topics’ (SFG: 8: Aoife). They added that this is because ‘we can watch them anytime and any day’ (SFG: 8). For another group, the video resources were useful for ‘recapping topics learnt prior to a test’ (SFG: 4).

In all the student focus groups, students, like their teachers, remarked that using video resources in the VLE complemented their learning and helped to boost their confidence. Undoubtedly, within the context of the classroom environment, confidence represents a fundamental attribute that is needed if students’ Emotional Intelligence is to be developed, since other Emotional Intelligence attributes, particularly those needed for successful interpersonal relationships can be said to be underpinned by high levels of confidence. It is possible to argue therefore that a student who lacks confidence is not likely to contribute to classroom discussions, share opinions or support other students. Similarly, it can be argued that where there is a lack in confidence, a student’s self-esteem will diminish and so will their motivation for learning and their outlook on life in general.

Unsurprisingly, the data obtained from the students’ questionnaire showed support for the use of video resources within the Fronter VLE. About 70% of students (Fig 3) considered the use of topic-related video resources useful for boosting their confidence. Interestingly, only 2.3% of respondents suggested that they are not likely to listen in class once they have watched a

topic-related video, even though 24.8% of the respondents were of the opinion that watching topic-related videos convinces them that they know everything about a topic. This means that the opportunity to have quality classroom dialogue still exists after students have watched the clips. In effect learning can be seen as being seamless and transcending the borders of the physical classroom (John and Wheeler, 2008). The data shows however, that some students (12.8%) did not identify with the statements used in the questionnaire. This suggests that it may be necessary for teachers to explicitly share with their students what they consider the potential benefits of using video resources in the VLE to be. Fig 3 is a diagrammatic representation of the students' opinions in relation to the use of video resources in the VLE.

**Topic-related videos posted on the VLE:**

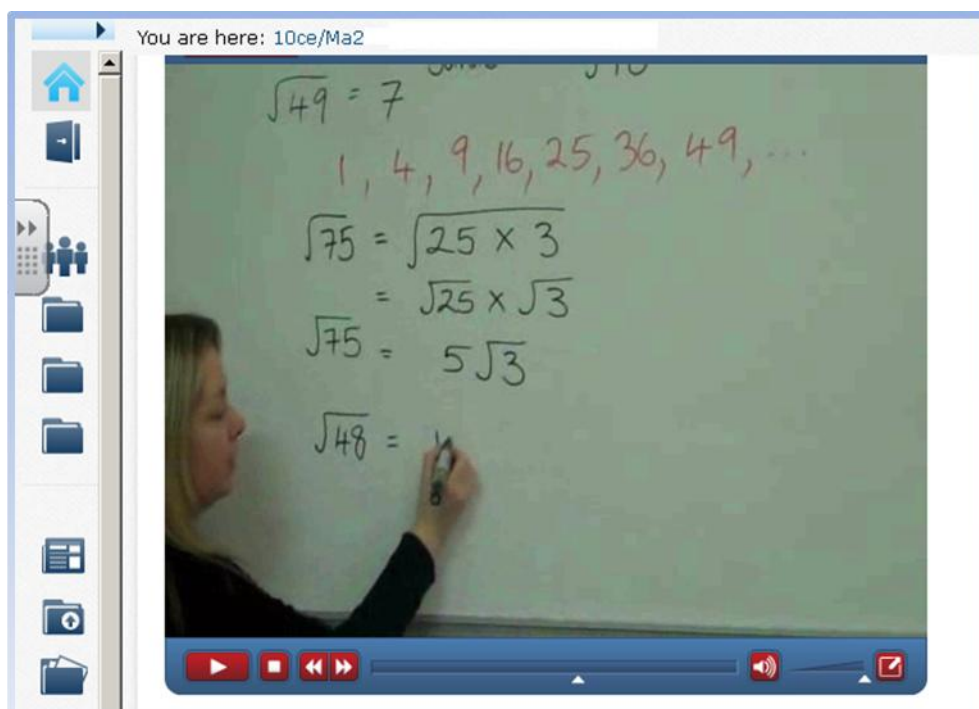
The question has been given 133 times (3 blank replies)

Alternative	Number (n = 130)	Percentage	
Helps to build my confidence about a topic	93	69.9%	
Enables me to value others' opinions	21	15.8%	
Encourages me to contribute to class discussions	46	34.6%	
Convinces me that I know everything about a topic	33	24.8%	
Encourages me not to listen in class	3	2.3%	
Helps me to support others	30	22.6%	
None of the above	17	12.8%	

**Fig 3: Students' opinions about videos as used in the VLE**

Students also commented on video resources in which their teachers featured. They were of the view that such videos enabled them to recap what had been learnt in class. They argued that because those videos were made by their teachers (Figs 4 and 5), ‘the examples and questions were more relevant’ (SFG: 10: Grace) to them. Bergmann and Sams (2013), in their examination of flipped classrooms, have also offered support for this approach to using videos with students. According to Bergmann and Sams (2013), videos in which teachers are featured enable students to better recognise and appreciate their teachers’ efforts. Moreover,

when teachers take time to prepare such videos for their students they model profound empathy (Cooper, 2010) and thereby, knowingly or unknowingly, encourage their students to demonstrate personal levels of interest and care towards each other. Students in SFG 8 asserted that such videos reminded them of what they had done during lessons. This, according to them, motivates them to use the VLE and to revise the topics they had studied. Consequently, one of the members of the group stated that ‘I think we should have videos for every new topic we study’ (SFG 8: Adwoa). In addition to these, another group of students indicated that they liked the video resources because they could play them as many times as they wanted. They asserted that ‘they [videos] help us to become more confident on the topic and it’s like having the teacher at home with you’ (SFG: 1). Figs 4 and 5 are screen examples of teachers’ videos used in the research study. Whereas the video represented in Fig 4 was used to introduce a lesson, the one used in Fig 5 was used for homework support and it involved the teacher modelling how the answers to the homework questions needed to be presented.



**Fig 4: Showing an example of a video resource in which a maths teacher is featured**



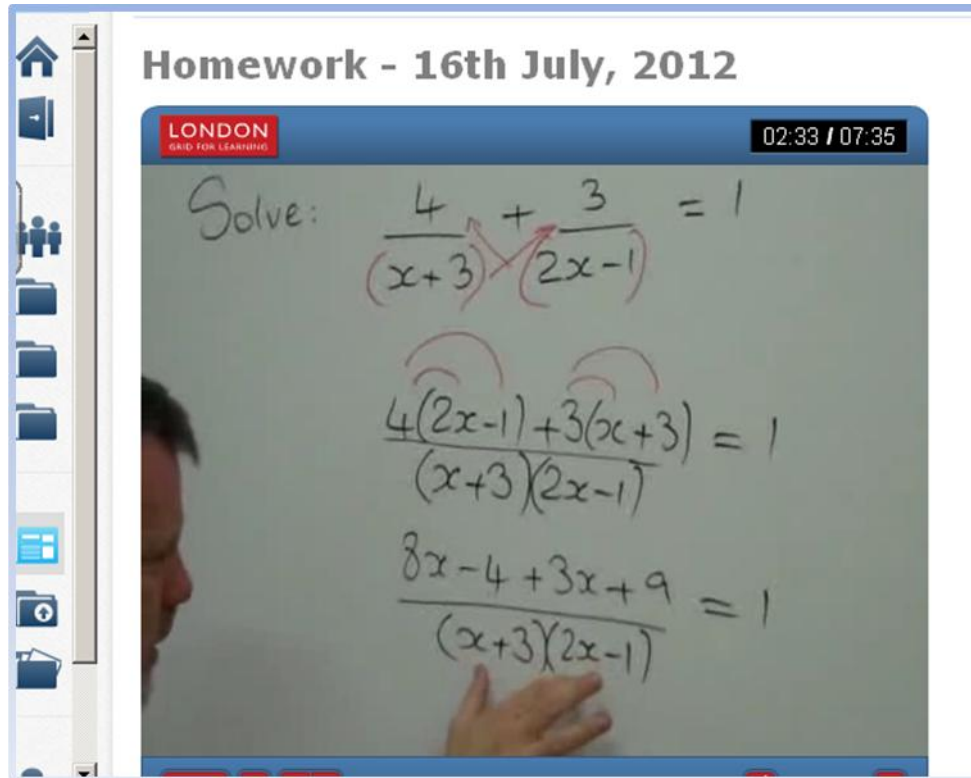


Fig 5: Showing how a maths teacher used a video resource to provide model answers for a homework task

With regards to posting a video resource prior to a lesson, students asserted in all the focus groups that it enabled them to gain better understanding of key aspects of a topic before arriving at lessons. One of the focus groups added that ‘the videos make us more confident in the subject and makes us understand it more’ (SFG: 3). In addition to this, another group stated that ‘it [the video] helps to build up our confidence to ask teachers and other students for help and guidance’ (SFG: 10). Consequently, one of them remarked that:

It [video] helps us to communicate with new people in the class. If someone else in the class understands the video topic more than me, a peer can describe the topic. Sometimes you respond better to your classmates (SFG: 10: Grace).

Another student asserted that:

Sometimes if the majority of the class pick up a topic quickly and we don’t as quickly, the videos are useful because we can pause it and rewind it without delaying time for other people’s learning (SFG: 7: Tamara).

The two statements above show how students are developing their Emotional Intelligence. In the first instance the student is expressing the confidence to depend on peers in times of need. The second student shows a demonstration of empathy, self-awareness and self-regulation. In other words, the student is suggesting that I am not going to let the lesson stop just because I have not got this bit, I can watch this part after the lesson, I can get help from my peers after the lesson, so let me allow the lesson to flow so that others' progress is not inhibited. Indeed, as a teacher I would prefer that my students ask for help as soon as possible so that misconceptions can be clarified sooner rather than later. Nevertheless, much will be achieved if students can demonstrate the emotional and cognitive maturity implied by the statements whilst ensuring that their needs as well those of their peers are met.

Three teachers, Ms Cashmere, Ms Dosso and Ms Smith, noted that a small number of students failed to watch the topic-related videos prior to lessons. They all emphasised that students were encouraged to watch the videos at home or to use the computers at school (homework club, breakfast club) if they had issues with Internet access at home. Whilst they appeared disappointed by their observations they were of the view that this did not significantly impact on their lessons as students were supportive of each other during classroom discussions.

One of the teachers, Ms Dosso, however expressed her frustration with those students' behaviour. She remarked that creating these resources takes a lot of the teacher's time and that the least students could do was to view/use them. These sentiments were also expressed by Mr Simons, a Content Developer and a VLE facilitator with five years' experience, who asserted that students are often 'unaware of how much work goes into preparing VLE resources'. It can be inferred from these remarks that the tendency for even the most motivated teachers to lose their zeal in relation to using the VLE exists. If that happens, then developing students' Emotional Intelligence through the use of VLEs will be difficult to achieve. Hence it is important to develop a collaborative culture not just between students or between teachers but also between teachers and their students. Furthermore, it may be necessary to find out from such students why they are not using the resources. An awareness

of the hindrances will undoubtedly help teachers to acknowledge and to address the students' concerns and consequently, help them to encourage student participation in the learning process.

In addition to helping to boost students' confidence, Ms Smith (teacher) suggested during her interview that upon watching the videos (in which students have featured) back, students can observe their own presentations and how they are perceived by others. They can then act upon how they present themselves in future situations. Although this point was not mentioned explicitly by other respondents it undoubtedly represents a very powerful means by which students can be supported in terms of developing their Emotional Intelligence. Playing back a video in which they have featured will enable students to better acknowledge the impact of their words and actions on other people. They could learn to self-regulate their emotions and also develop a sense of empathy by reflecting on what others have said about their presentations. This in effect, will help them to appreciate themselves a bit more. Consequently, they will be more able to develop a positive self-esteem and a positive outlook towards school and life in general.

To summarise their opinions about using video resources within the VLE, one of the students made this comment:

For some reason watching videos instead of revising from books helps me learn more and I am more engaged. I am not saying that we should only just watch revision videos. However, we should incorporate revision videos into our learning more, because for me and I am sure for other people as well, it does help gain confidence, motivation and willingness to contribute to class discussions and more. It also prepares the whole class for the next lesson so it puts everyone on the same level (SFG: 4: Ada).

In spite of the very positive opinions expressed by the students, they also outlined some concerns relating to the use of videos within the VLE and how it impacted upon them. Two focus groups particularly expressed their frustration with broken links and videos that 'do not work' (SFG: 4, SFG: 6). Hence, they suggested that teachers check that the videos they

embed within the VLE work before directing them watch it. They asserted that sometimes not all the students in the class watch the videos as some of the videos were not interesting. They also indicated the tendency for some students not to pay attention in class because they may have watched a video prior to lessons. These observations served as an eye-opener and emphasised the need to identify intervention strategies that can be adopted when students (or teachers) fail to use VLE resources and tools in expected ways.

#### **4.4 Findings in relation to VLE forums**

From the point of view of interviewees, my perception (Donkor, 2013) is that the use of VLE forums for teaching and learning is valuable for developing Emotional Intelligence in the classroom. Even so, it became apparent through the interviews that teachers used the forums in different ways although their common goal was to encourage discussions, to reinforce learning and to offer support beyond the classroom. It was noted that whereas some teachers used the forums as a means of providing homework support others used it as a tool for facilitating discussions amongst peers, as a platform for putting across ideas in order to obtain feedback or as a means of assessing students' prior knowledge before a topic was taught.

Three interviewees indicated that apart from encouraging reflection, helping to improve self-awareness and self-regulation, the use of VLE forums also offered students opportunities to discuss their work with peers and encouraged shy students to 'ask questions in a more discrete way' (Mr Boyd, teacher). Thus, students who were normally shy in face-to-face classroom environments were able to ask questions as well as contribute to discussions.

Teacher participants were in agreement that when used properly, VLE forums could provide a good basis for starting classroom discussions and homework support. Furthermore, all the teachers who were interviewed agreed that forums could form the basis of very positive relationships amongst students. Below is another extract from the music teacher. It shows

one of the ways she trialled forums and the impact it had on teaching, learning and relationships within her subject area:

Before, Music homework used to be very written, draw a picture! Or you could get them to find something you needed them to learn about. Now, you can actually direct them to specific bits of music. Finally we have musical homework, listening homework... they listen to the music and then I set up a forum. I get them to just listen [not watch a video] to a scary piece of music. For example, a night on a bald mountain, and then I say, let your imagination run wild... and they have to go on to the forum and write down what they think the story is (Ms Noble, Teacher).

A number of important points are raised in this extract. First, it highlights the fact that VLE technologies can enhance teaching and learning by offering new and creative ways of delivering the curriculum. The extract also shows how students' imaginative abilities were stimulated, and how through the use of a VLE forum the teacher encouraged her students to share their individual views with the class online. By posting their views online, one can argue that each student was offered several ideas and opportunities to revisit the discussions and to redefine or improve upon their own original propositions. This was indicated by the teacher's assertion that '... and because there is a forum session you've actually got 120 responses so there is a lot for them [students] to read'.

The next extract highlights the relevance of the music teacher's actions to this research study. It emphasises that by adopting the use of VLE forums, she was able to promote collaboration amongst her students both online and in the classroom. In the process, it can be argued that she was creating opportunities for students to establish positive relationships with each other. Students also learned to accept and to give feedback. Finally, the point that students were enthusiastic about sharing their experiences indicates appreciable levels of confidence, a good level of self-esteem and a willingness to listen to others' views.

... they come back with these AMAZING ideas about all sorts of things, people being chased, ghosts ... And they are always excited about the opportunity to share those ideas. The ENTHUSIASM [emphasis] when they come back together to talk about this thing that they did individually is something I can't replicate in class at all (Ms Noble, Teacher).

The assertion by this music teacher was confirmed by visiting her department's virtual classrooms. Figs 6 and 7 below are screenshots taken from the department's Year 7 VLE forum. They confirm the music teacher's assertions concerning her use of forums within the VLE:

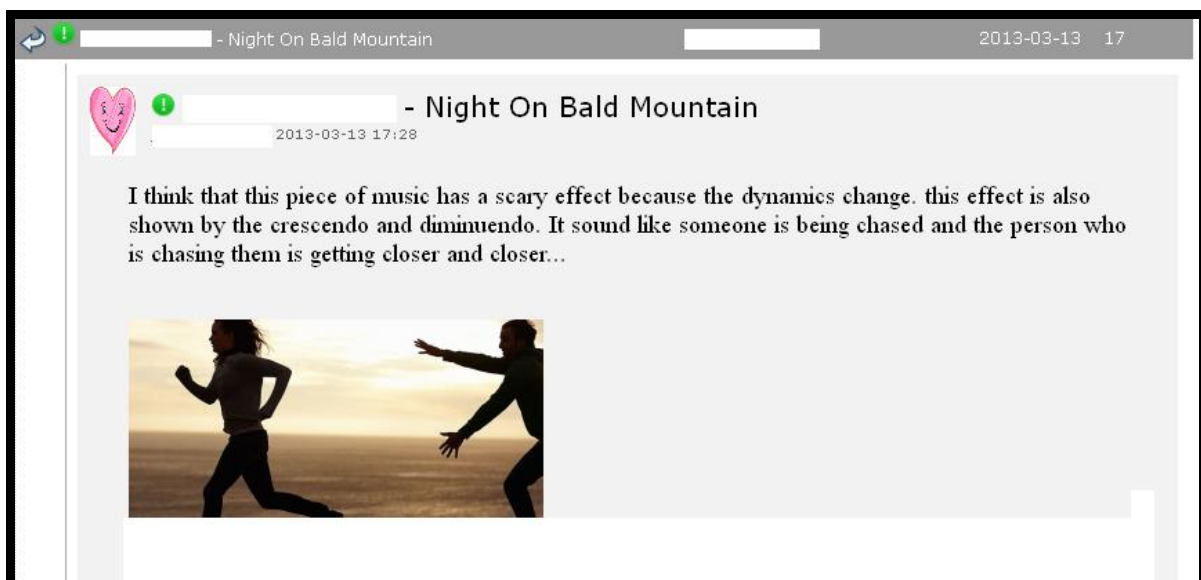


Fig 6: Showing a student's opinion about a piece of music as posted in a forum

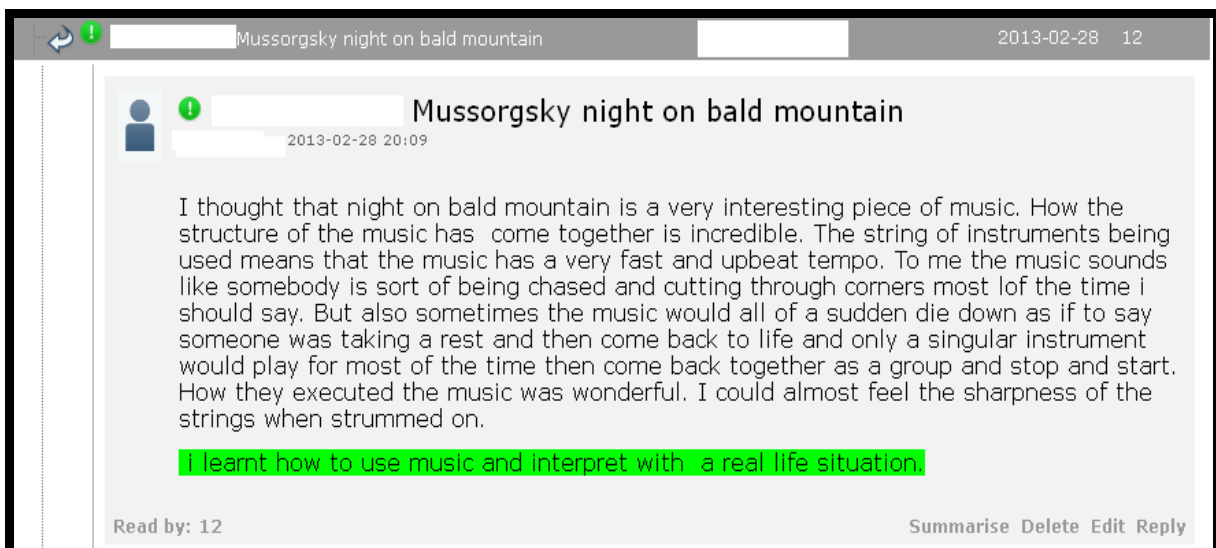
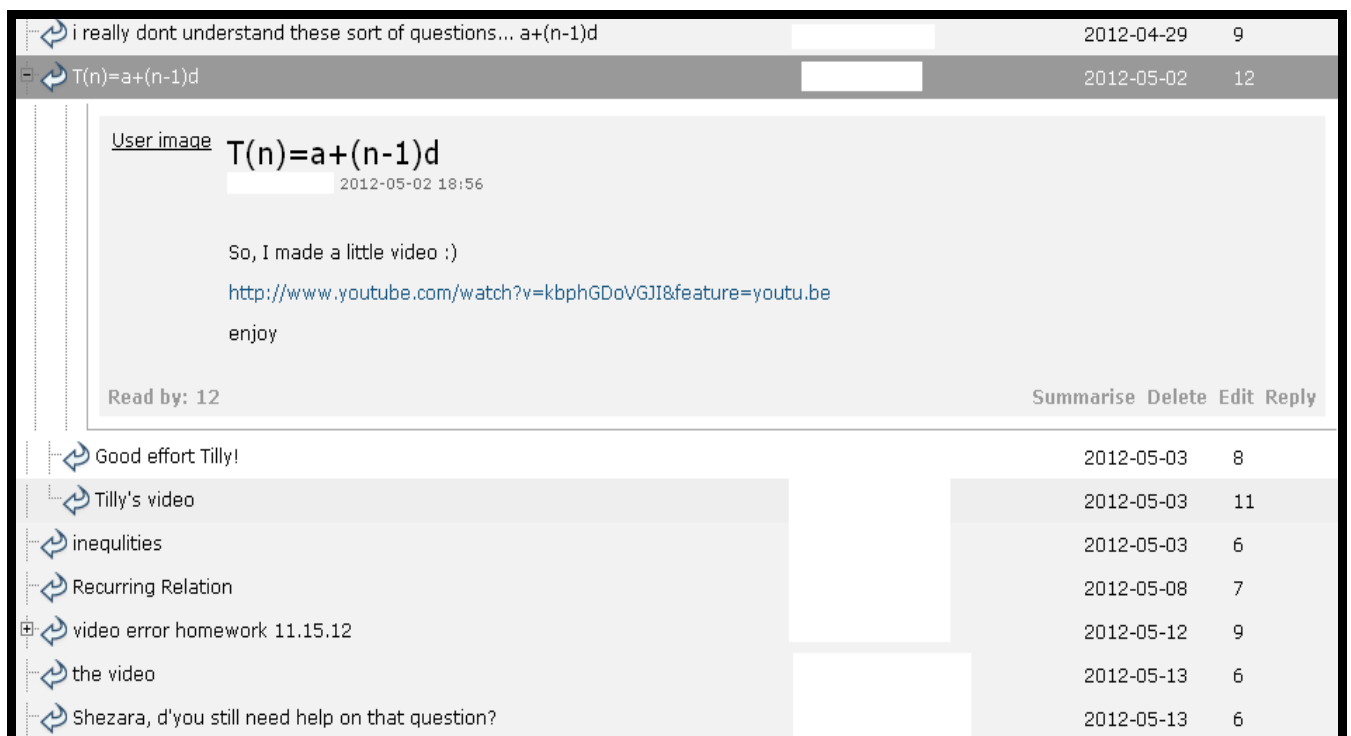


Fig 7: Showing another student's opinion about the same piece of music as posted in the forum

A mathematics teacher, Mr Johnson, noted that using forums within the VLE did not only facilitate communication amongst the students but also allowed them to be creative in the way they supported each other. He observed that in some cases, students made their own videos (Fig 8) and posted them to the forums so that their peers could improve upon their understanding of topics. Such behaviour, he added, was a demonstration of empathetic behaviour by the students. Fig 8 shows an example of the interactions within a VLE forum where a student had created a video resource for another student who had requested help in relation to a topic the class were studying.



**Fig 8: Showing how forums are used in maths to encourage discussion**

In the opinion of this mathematics teacher (Mr Johnson), the forums were instrumental in motivating the students to work harder and to ask for help when needed. He noted that the students appreciated each other's comments. As a consequence, he was of the opinion that his students began to trust their peers' opinions a bit more.

Fig 9 is another screenshot from the mathematics department’s VLE forum. It shows how a student used a variety of fonts and colours to emphasise key points in her question. Of significance to the concept of Emotional Intelligence is how she articulated her strengths (self-awareness – ‘I understand what they mean ...’); how she presented her limitations (self-awareness – ‘but what do you ...’); trusting that somebody will respond to her question and then showing appreciation to the potential respondent (thanks highlighted).

Thread Title	Date	Views
it is good	2012-03-15	10
past papers	2012-03-22	11
Attention	2012-03-24	12
videos	2012-04-29	8
<b>i really dont understand these sort of questions... a+(n-1)d</b>	2012-04-29	9
T(n)=a+(n-1)d	2012-05-02	12
inequalities	2012-05-03	6
Recurring Relation	2012-05-08	7

**i really dont understand these sort of questions... a+(n-1)d**  
 2012-04-29 17:08

i really dont understand these sort of questions... **a+(n-1)d**

i understand what they mean... like **a** means the **first term** and **n** means the **term your finding** i think? and **d** means the **difference** but what do you substitute into them whaen you have a question ???

the questions that i look at always have something to do with simultaneous equations but i dont get how to find the equations to solve !!!??

please help! **thanks :)**

Read by: 9 Summarise Delete Edit Reply

**Fig 9: Showing how forums are used in maths**

To summarise her views about using VLE forums, an interviewee indicated that:

The forums are an excellent way for pupils to share ideas and to ask each other for help if they are stuck on questions they don’t understand. It also enables groups to collaborate and set aims for next lesson... looking back at their work and communicating about ways to improve it (Mrs Laing, teacher).



Another interviewee, Mr Boyd, emphasised that students were very careful about their use of language and that he did not observe any issues relating to cyber bullying. He explained this position by arguing, that because the forum was embedded in the school's VLE, students assumed that their actions could be traced to them. On the one hand, this observation suggests that students were aware of the consequences of any inappropriate behaviour within the school's VLE and therefore they learned to self-regulate their behaviour. On the other hand, the possibility exists that students may be discouraged from using the VLE forum if they think that their every action is being monitored. This calls for trust amongst the users of VLE forums. And that is another important competency that needs to be considered if educators are to succeed in using VLE forums to support their students' Emotional Intelligence. Moreover, as noted by Ms Isik, an ICT Consultant with over 20 years' experience in education, 'the strength of Fronter is that it offers student-student and student-teacher interaction in a safe environment'. According to her, although VLE forums allow students to 'chat' in a similar way to how they would in social network settings, 'they incorporate e-safety issues if and as they arise'. And this, undoubtedly, is important for safeguarding purposes.

Other interviewees (Ms Cashmere, Mr Christian, and Mrs Laing) noted that the success of VLE forums depends on students' emotional and cognitive maturity, supervision and the subject matter. One such interviewee (Mr Christian) added that if the students are using the forum because they are interested, then they will develop positive relationships. On the contrary, he argued that forums can lead to very negative relationships when students begin to choose between whom to respond to and whom to ignore. Although this seems a valid point, it did not reflect the experiences of other participants.

Instead, it was highlighted that VLE forums allowed students to interact with one another in a friendly manner thereby encouraging them to work well with each other beyond the physical classroom environment. As a consequence, one teacher (anonymous questionnaire respondent) stated that students are encouraged to continue to build their relationships and are in a better position to positively support each other. Another colleague responded during the

interview that VLE forums make it possible for students to relate to the opinions of other people ‘whom they may not socially mix with in a normal classroom setting’ (Mr Boyd, teacher). As a consequence, they suggested that students’ ability to empathise and also to interact with such individuals is facilitated. It also emerged that because students know that their opinions are important and that ‘everyone else is going to read them’ (Ms Dosso, teacher), they take time to form such opinions carefully and in the process become more self-aware.

It followed from the discussions that took place in the staff focus groups that VLE forums can help to develop self-awareness, empathy and relationship management skills amongst students. This is because the forum allows students to post questions they may have about their homework or aspects of a video that they did not understand (this shows self-awareness in relation to their limitations in a topic). And other students are able to share their knowledge and experiences with the group (showing empathy and relationship management). The point was also made that in order not to offend their peers, students are likely to reflect upon the questions or responses that they post to the forum. This in turn, it was argued, would help them in developing further, their self-awareness and self-regulation skills.

One of the staff focus groups (TFG: 3), indicated that because students have in mind that they may be the ones posting questions in future, they learn to become empathetic and so develop relationship management abilities such as listening to others’ views and responding appropriately to others. Knowing that they can count on each other also means that students learn to trust each other’s opinions. According to the staff participants, these experiences may transcend into face-to-face situations and can lead to the development of emotionally intelligent classroom environments. Nevertheless, it was noted in the staff focus groups TFG3; TFG 5; TFG 6 that success in using forums to support Emotional Intelligence requires that teachers spend more time on the forums themselves in order to monitor content and to offer support.

From the discussions that took place in SFG:10, it was apparent that students found issues with the way forums are currently used in the school. They noted that some students tend to post irrelevant conversations, hence distracting others' attention from pertinent discussions that may be on-going. For some students this was frustrating and hence they did not find using the forums encouraging. Others mentioned that even though their teachers directed them to the forums, sometimes as part of their homework, they realised that their teachers only went to the forum to check if they had posted contributions without really commenting on the quality of their comments. As a result, they indicated that VLE forums in some subjects are 'meaningless because they are not being effectively used' (SFG: 10). This observation was for me very disappointing considering the positive use of VLE forums as noted in the music and mathematics departments. Nevertheless, it enabled me, as the teacher responsible for the school's VLE and also as a researcher, to identify with some of the challenges associated with the use of forums in the school, to share the positive experiences observed in other departments, and to solicit and discuss strategies for the effective use of such forums with staff and students.

Some students (SFG: 4) identified that teachers need to respond quicker to requests in the forums. This, they argued, will enable them to attend subsequent lessons well informed, thereby increasing their understanding of issues, self-confidence and willingness to join in subsequent discussions whether online or in the classroom. They added that 'forums are quite pointless if the teacher is not moderating' (SFG: 1) because then the, 'forums are hardly used by anyone' (SFG: 9). Mr Simons (Content Developer and VLE facilitator), shared this view. According to him, 'forums need active teacher participation and monitoring' and that 'students must feel their comments are read and responses are promptly given to stimulate further discussion'. This point of view was supported by Ms Isik (ICT Consultant). She asserted that teachers should refer to and comment on VLE forums regularly, or at least, 'show VLE forums on their IWB for 5 minutes a couple of times a week and discuss latest contributions'. These observations, without doubt, highlight the point made by Mason (2011) that considerable moderator participation is required for the success of VLE forums.

Even so, one of the groups asserted that:

The forums help us to understand things that we didn't understand fully in class because they [forums] enable us to ask and answer questions. So class work can become clearer (SFG: 4).

In addition, another group asserted that:

VLE forums can be more powerful than wikis if teachers moderated them well because information on wikis are not reliable whereas those on a well moderated forum is more likely to be (SFG: 10: Samira).








Students also indicated that forums 'are useful because you can ask for help really easily and a lot of people can help you' (SFG: 9); are 'great because we can use them to revise and to support our learning' (SFG: 4); 'is a way that us students can help other students by suggesting things [sic]' (SFG: 4). Students in SFG 10 suggested that the forums enable them to discuss class work and homework. They pointed out that they found the forums particularly useful when they have been absent from school. This is because it offered them the opportunity to find out from their peers and teachers about what had been done in class and how they could proceed with their homework.

This means that VLE forums can offer students opportunities to support one another in terms of informing each other about missed homework; helping each other with difficult homework; or directing each other to good revision sources. This type of behaviour, the teachers noted, shows positive relations between students and helps them to develop key Emotional Intelligence competencies such as empathy, collaboration and relationship management.

Fig 10 is a diagrammatic representation of the data collected in the student questionnaire. It shows students' views in relation to the use of VLE forums. It can be seen that the responses to a large extent, support the views expressed by staff and students in their focus groups.

### The forums on the VLE:

The question has been given 133 times (3 blank replies)

Alternative	Number (n =130)	Percentage	
Makes me feel valued	22	16.5%	
Makes me think about what I want to write	44	33.1%	
Enables me to get support	48	36.1%	
Enables me to discuss work with my peers	66	49.6%	
Helps me to understand others' opinions	58	43.6%	
Enables me to support others	38	28.6%	
None of the above	21	15.8%	

**Fig 10: A diagrammatic representation of students' opinions about impacts of VLE forums**

Although the most popular response was that the use of VLE forums enables students to discuss their work with their peers (49.6%), it was interesting to note also that 43.6% of the respondents suggested that the VLE forums enables them to understand others' opinions. This is crucial if teachers and VLE developers are to succeed in helping students to become more emotionally intelligent through the use of VLEs. This is because it means that they are tuning into each other's opinions and/or emotions and as a result are more like to demonstrate empathetic behaviour. As a result of accepting and offering support to each other students may learn to trust each other a little more, thereby helping them to maintain good relationships. Unfortunately, the data shows that only 16.5% of respondents indicated that the use of VLE forums helps them to feel valued. This suggests that there is more to be done

by educators in terms of developing the confidence and positive self-esteem of students through the use of forums. And this is important if VLEs are to be used in supporting the Emotional Intelligence abilities of students.

#### **4.5 Findings in relation to VLE tests**

During focus group discussions it became clear that only a small minority of teacher participants utilised VLE tests – on the grounds that they were time consuming to prepare. In fact only 3 out of the 10 teachers who were interviewed claimed to have used such tests regularly. Again respondents cited lack of time to create the tests as a major issue. Those who trialled the tool however, indicated that such tests can help students to be resilient and also encourage them to be motivated or to ask for help.

Questionnaire responses suggested that tests could be depended upon to support students' Emotional Intelligence by enhancing their learning motivation and confidence. Four respondents remarked that VLE tests:

- Are great because pupils have the chance to improve their score. They want to do better than before and they know that the teacher will see how they have progressed. Therefore it develops their resilience and ambition
- Have important impacts on motivation due to the quick feedback
- Aid motivation through positive reinforcement and motivation to show improvement
- Are more attractive and accessible than paper based tests. It feels more like a challenge for them [students] and enables them to identify their strengths and things to improve on quicker

The key Emotional Intelligence attributes, which can be seen across the statements, are motivation and resilience. This was corroborated by Mr Simons (Content Developer and VLE facilitator), who argued, that the opportunity to give 'auto- and personalised feedback can encourage students to soldier on and reinforce success'. In other words, using VLE tests

enables students to see quickly how well they have done. As a result of the immediate opportunities for students to learn from their mistakes it became apparent that students are more likely to become successful learners. Consequently, their confidence and self-esteem grows and as suggested by Russell et al. (2006), there is an increased possibility of them carrying positive emotions about their learning experiences into subsequent lessons.

The responses gathered provided little evidence of how using test tools enabled teachers to assess their students' ZPD as indicated by Vygotsky (1978) and Ahmed and Pollitt (2010). Only one teacher, Mr Johnson, hinted that the test tools enabled him to track which topics a student may not be excelling at in order to intervene. This observation is a reflection of the fact that colleagues had not experimented enough with the test tools; for, if they had it is likely that more of them would have commented on issues like how using the test tools helped to track students' progress, how it enabled them to access students' particular needs, how it informed lesson planning or how they were able to promote peer support.

It was very clear from students' and teachers' points of view however, that the automated showing of correct answers feature of the test tool, enabled students to recognise their mistakes, to learn from them, and to grow in self-confidence. For example, a student asserted that 'it [VLE tests] shows you your scores and what you did wrong' (Rachel, year 7 student). Zoe, a year 8 student stated that 'it helps me to be confident about what I have learned'. Thus, the VLE may be perceived as being the 'more capable other' (Kim and Baylor, 2006) which unobtrusively guides the learner to higher levels of attainment by highlighting what they have done well and what they need to improve upon.

On the other hand, it was noted that:

Being automatic the test tool will not recognise typos [sic] so it will mark a pupil's answer wrong when a teacher might mark it correct (or correct a spelling error). This would be very de-motivational. Pupils may even 'un-learn' a correct answer! (Mr Simons, Content Developer and VLE facilitator).

This point of view is very worrying in terms of helping to develop students' Emotional Intelligence as well as helping to raise attainment because it suggests that rather than test tools helping to stimulate motivation for learning, enjoyment and positive emotions, they can actually lead to disinterest, de-motivation, lack of resilience, frustration as well as poor levels of attainment if used incorrectly. Students who commented on their frustration with online tests used in the VLE made similar observations. One such student asserted that 'new teachers should be taught how to create tests properly' (SFG: 8: Lucy). According to her, she finds it frustrating when she is marked wrong for something she had done correctly simply because the teacher did not setup the test properly.

Other students complained about time limits associated with the tests when set as part of homework. According to them such time limits prevent them from doing other things as the test would expire by the time they returned. Students also emphasised that they have on occasions been unable to ask for help or discuss their work with peers because of the time limits. With regards to this research study it may be argued that by denying students the opportunity to discuss work with peers, teachers may be limiting their students' chances of developing key Emotional Intelligence skills such as empathy, peer support and collaboration. However, it could be argued that the use of time limits provides good practice for self-regulation, time management and examination practice. The observations made in the research study shows that it may be useful for teachers to occasionally setup their VLE tests without time limits.

Asked about how the use of VLE tests impacts upon them as individuals and in their relationships with peers, Zara (year 10 student) indicated that 'the tests are a good way to revise'. Another student asserted that 'it encourages me to talk a bit more about class work with my friends' (Eve, year 7 student). Ada, (SFG: 4) remarked in her focus group discussions that, 'I am the type of person who is very competitive...I always want to be on top and so I like to do those tests which enable us to compete with each other'.



In brief, four key issues have become clear in relation to the use of VLE tests in this research study. Firstly, access to automated diagnostic comments and automated showing of the correct answer and reasoning (Gipps, 2005) can be useful in helping students to develop Emotional Intelligence skills as they promote motivation and resilience. Secondly, there is a need to adopt a whole-school approach towards encouraging the adoption and use of test tools. Not just because we want to develop students' Emotional Intelligence abilities, but also because test tools can be used to offer our students a quick and efficient means of revising and diagnosing areas for development within the topic being studied. Thirdly, it can be inferred from Ada's statement above that VLE tests can be fun and can be used as a platform for creating healthy competition amongst students. Finally, teachers must be constantly aware of the danger of 'de-motivation' and 'unlearning' posed by the use of automated feedback functions in VLE tests.

#### **4.6 Findings in relation to using feedback**

The need to identify different ways by which students can be offered feedback for their work in VLEs was highlighted in the staff questionnaire responses. One of the respondents, for example, suggested that students could become emotionally linked to their work. This is because in most cases students would have spent a lot of time and effort on tasks. Hence, they may also have a feeling of ownership and pride in their work. As a result, this anonymous respondent asserted that negative feedback could create negative emotions. Although this respondent also added that such feedback can be used to motivate students to improve, participants (for example, Mr Boyd, Mr Christian, SFG8, SFG 6) were of the view that positive feedback helps students to take pride in their work, encourages them to become confident, raises self-esteem and encourages them to have a positive outlook. It was highlighted that:

- When offering feedback in a VLE using tools like forums, it is important to keep feedback positive as ‘public’ disapproval can ‘affect a student instantly and also later on in the relationships they develop with other adults’ (Anonymous, teacher questionnaire)
- Students should be taught to give feedback in a sensitive and constructive manner as this ‘develops a sense of self and others’ (Anonymous, teacher questionnaire)

Undoubtedly, VLEs offer several opportunities for students to receive feedback from their teachers as well as give or receive feedback from their peers. Students who took part in this research study acknowledged that they have been able to receive feedback through the VLE forums and other tools for providing feedback such as those associated with the hand-in folder and test tools. They indicated that the nature of the feedback they have received through VLE tools, though not regular, had been useful in helping them to gain more understanding of what they were expected to do and helped them to feel better about themselves. Students noted that:

- Only negative feedback is upsetting
- Positive feedback changes attitude
- Constructive feedback is ‘sooo’ [sic] useful

In SFG 9 students noted that unlike summative assessment tasks where they are awarded marks, feedback given for VLE tasks could take the form of the ‘two stars and a wish’ policy which their teachers adopt when marking their books. To them, the ‘two stars’ – two things they have done well on the task and ‘a wish’ – something they can improve upon, is a more effective way of assessing their work. The ‘stars’ make them see the value in their work whilst the ‘wish’ enables them to reflect upon what they can do better next time. They further noted that a Q&A (question and answer) section on the forum would consequently enable them to seek support from peers about how to further develop the teacher’s ‘wish’.

A teacher observed that putting videos on the VLE and asking the class to express their views about them led to some ‘very exciting and interesting class discussions’ (Anonymous, teacher

questionnaire) as students were able to feedback to each other about their opinions in relation to different aspects of the videos. Another respondent asserted that ‘my students have had to feedback on each other’s ideas which require Emotional Intelligence’ (Anonymous, teacher questionnaire).

Fig 11 shows students’ views about how the use of feedback within the VLE impacted upon them. It can be seen from the responses, that giving and receiving feedback can be depended upon to develop students’ Emotional Intelligence, as it has the potential to promote self-esteem (41.4%), motivation (51.9%) and listening skills in students (46.6%). It is however unclear why only 28.6% of respondents were of the opinion that the use of feedback within the VLE encouraged them to support others, considering that there were various instances in the research study where students had been perceived as being supportive of each other.

### Feedback given by my peers and teachers:

The question has been given 133 times (2 blank replies)

Alternative	Number (n = 131)	Percentage	
Helps to boost my self-esteem	55	41.4%	
Encourages me to share my opinions	57	42.9%	
Makes me want to help a bit more	38	28.6%	
Encourages me to listen carefully to other's opinions	62	46.6%	
Encourages me to work harder	69	51.9%	
None of these	13	9.8%	

Fig 11: Students' opinions about the impact of feedback

A conclusion that may be drawn from the apparent lack of empathy is that students considered giving and receiving feedback as just another task that they had to undertake. In other words, they did not connect with the person with whom they were giving feedback to or receiving feedback from. This suggests that it may be necessary to encourage students to share with their peers, why and how they arrived at the feedback they choose to give on VLE tasks during face-to-face classroom interactions or even, as part of the feedback they give within the VLE.

## 4.7 Reflective journals

So far, it has been shown that the strategic adoption of VLE tools for communication in forums, videos, tests and feedback can help in developing students' Emotional Intelligence whilst promoting active participation in classroom dialogue and positive attitudes towards learning.

Another strategy, which came to light as a potential means by which students' Emotional Intelligence may be developed, is the use of reflective journals. One focus group (TFG 3) referred to this strategy in their deliberations. According to them, to develop Emotional Intelligence, students should be encouraged to keep a log of their emotional experiences when they work within the VLE. They suggested that students may include in this journal, emotions they experience when they are offered help with their work online; discussions in online forums; occasions they have been motivated to work within the VLE as well as occasions when they have been frustrated with the VLE. By keeping such a journal and referring to it, they added that students will become more aware of their own emotions, and hence will be able to adapt their behaviour more appropriately when they are around other people. This idea is similar to the one suggested earlier in relation to students re-watching videos in which they have featured (section 4.3). The use of reflective journals and the point about re-watching videos and noting behaviours both require students to document observations they make about how their actions impact on others as well as how others' actions and feedback impact upon them. Furthermore, they suggest that students can learn from such practices, how to become self-aware and how to self-regulate their behaviour and emotions in future situations. Analysis of students' reflective journals can also lead to the revelation of 'a vicissitude of emotions stemmed from challenging course expectations and group dynamics' (Storrs, 2012, p. 1) and hence, can provide for teachers, new opportunities to learn about and respond to students' cognitive and emotional needs.

## **4.8 Discussion of emerging themes**

The preceding sections presented the key revelations of the research study from the perspective of the individual methods of data collection used and also on the basis of a cross-method analysis. In the process actual statements made by research participants were depended upon to provide clear chains of evidence (Benbasat *et al.*, 1987). As a result of the in-depth analyses it was possible to project the contextual and data richness of this research study in those sections.

In subsequent sections, the themes generated from comparing and contrasting the patterns observed in the different methods of data collection and coded data are discussed in relation to the extant literature. Patton (2002) refers to the corroborating of findings from different sources as data triangulation. According to Yin (2009), data triangulation forms a very significant part in the analysis of case study data. This is because it leads to ‘the development of converging lines of inquiry’ (Yin, 2009, p. 115). By undertaking this data triangulation therefore, I expect the findings of the current research to be accurate and more convincing as suggested by Yin (2009). Moreover, the major emerging themes have been discussed with reference to the key Emotional Intelligence attributes proposed in the literature in order to enhance the theory-based validation of the research study as proposed in Table 6.

### **4.8.1 Self-confidence and self-esteem can be enhanced by VLE resources**

A key theme identified throughout the research study is that the strategic adoption of VLE tools led to the enhancement of students’ self-confidence and self-esteem. As shown in the earlier sections of this chapter, participants’ assertions carried the clear message that the use of VLE forums, videos, tests and feedback tools enabled students’ to grow in confidence and self-esteem.

This argument finds support in teacher interviewees' assertions that videos for example, enabled their students to develop more understanding of the topics being studied and in effect helped them to develop confidence and self-esteem (Appendix 3). The point is supported further by the students' own responses to questions used in the questionnaires in which 69.9% of respondents indicated that their confidence had been developed as a result of watching video related topics (Fig 3) and 41.4% indicated that their self-esteem had been boosted by the feedback they had received for contributing to VLE forums (Fig 10). Similar arguments were also found in both the staff and students' focus group discussions.

Even though similar and often used interchangeably, self-esteem and self-confidence are different constructs. According to Wilding (2010) self-confidence (how you feel about your abilities) is a result of your self-esteem (how you feel about yourself overall). She goes on to assert that self-confidence is 'self-esteem in action' (p. 63) and that when people are self-confident they feel good, try harder, stretch themselves a bit more and believe that they can succeed. In other words, self-esteem underpins our ability to adapt to situations. It enables individuals to be resilient in the face of obstacles and encourages them to seek out opportunities to use their skills.

The important Emotional Intelligence competencies of self-esteem and/or self-confidence were also facilitated through the use of VLE forums. In Section 4.4 it was shown how a student was aware of obstacles in her learning and was confident enough to clearly post her concerns to a friendly VLE forum (Fig 9). The result of this action is demonstrated in Fig 8, where another student demonstrated self-confidence by explaining in detail through the use of videos how those obstacles (difficulties within the topic being studied) could be overcome. It was noted in Section 4.3 that students, as a result of referring to video resources prior to lessons, were able to form and express their own opinions regardless of what others thought. Such behaviour, according to Goleman (1998), demonstrates self-confidence; for, as Goleman (1998) puts it, people with self-confidence possess 'inner strength, they are better able to justify their decisions or actions, staying unfazed by opposition' (p. 69).

#### **4.8.2 Self-awareness and self-regulation competencies can be enhanced by VLE resources**

According to Goleman (1998), possessing the Emotional Intelligence attribute of self-awareness includes having a realistic assessment of one's own abilities and 'a well-grounded sense of self-confidence (p. 318). In relation to this study, evidence from different sources demonstrates how students' self-confidence had been perceived: a) by themselves and; b) by their teachers.

If the argument that students' self-confidence was improved as a result of using certain VLE tools holds true then one can argue on the basis of Goleman's (1998) assertion above that students' self-awareness abilities were also enhanced as a consequence. Undoubtedly a person's ability to develop self-awareness can be facilitated by practices which focus their attention to their personality and behaviour (Wilding, 2010). Therefore, by offering students opportunities to reflect upon their actions and emotions, it can be argued that participants of this research study were helped to develop their self-awareness and hence other Emotional Intelligence abilities such as confidence, collaboration and positive relationships.

As mentioned previously for example, some students had the opportunity to be captured on video explaining or demonstrating tasks to their peers. Although the ultimate goal for making such video clips was to aid students with their revision, one of the students who featured in the videos asserted that being in the video meant that 'I had to pay attention to myself and what I was saying ... I didn't want to look or sound silly' (SFG: 10: Caroline). Another student noted that 'after watching the video again, I think I looked too serious... Next time I will try to relax and smile a bit more' (SFG: 10: Stephanie). A teacher, on the other hand, observed that:

... with the use of the video within the classroom, they [students] were a little bit less collaborative in the sense that they wanted to be in the spotlight (Ms Smith).



Indeed, this was not the expected outcome and one could tell from the teacher's facial expression that she was disappointed. Nevertheless, seemingly disappointing situations like these can be used to help students to improve upon their self-awareness. For example, students could be asked to re-watch the videos, to reconsider their behaviours in the videos and to reflect upon how they think others would perceive of such behaviours. Undertaking such tasks, will enable students to assess their personality as well as behaviour and thereby help them in becoming more self-aware. Such practices find support in Gillies' (2011) assertion that students should be encouraged to read and speak about their emotions fluently within the classroom. In addition, such practices fit the idea of 'reflective journaling' which Storrs (2012) argues, can enhance self-awareness, critical thinking, and learning' (p.3), as it enables students to be sensitively aware of and acceptant towards their own feelings (Greenhalgh, 1994).

It was apparent from the different sets of data collected that VLE forums can also help students to develop their self-awareness and self-regulation abilities. As suggested by some of the teachers who were interviewed (Mr Boyd, Ms Dosso, Ms Noble) and also in the staff focus group discussions (TFG1, TFG2, TFG 5) the forums offered students opportunities to form their opinions and to express them. Also, as noted earlier, the fact that students knew that their actions could be traced to them meant that they were careful about what they posted to the forums. Besides, the nature of the feedback they gave to their peers showed that they thought about what they were writing. All of these examples show that students learnt to manage their emotions carefully so that they facilitated rather than interfered with the tasks at hand.

Going back to a comment in one of the student focus group discussions (section 4.4) – that VLE forums need to be carefully moderated by teachers – one can see that in cases where the forums were not well moderated, it was possible for some students 'to post irrelevant conversations, hence distracting others' (SFG: 10). For other students to ignore such

irrelevant conversations and to concentrate on the more meaningful discussions indicates that they were: a) self-regulating their learning experiences and b) self-regulating their emotions. A student who is incapable of self-regulating his or her emotions can be easily frustrated or even distressed by the actions of others and consequently would respond to such posts with rude comments which could in turn lead to undesirable consequences. On the other hand, Bandura et al. (1996) assert that students who are able to self-regulate their own learning and academic attainments promote high academic aspirations and pro-social behaviour whilst ‘reducing vulnerability to feelings of futility and depression’ (p. 1206). As a consequence of their ability to self-regulate their emotions and learning, such students are able to add to the calmness and positive atmospheres expected in emotionally intelligent classrooms.

### **4.8.3 VLEs can help students to understand/support others**

Goleman (1998) posits that people who understand others:

- Are attentive to emotional cues and listen well
- Show sensitivity and understand others’ perspectives
- Help out based on understanding other people’s needs and feelings

In considering these attributes it can be said that the use of the VLE enabled some students to demonstrate this Emotional Intelligence competency also referred to as empathy (Goleman 1995; Salovey and Mayer, 1990). However, the proportions of student respondents who suggested that using VLE tools enabled them to demonstrate empathetic behaviour were not very encouraging (Figs 3 and 10). 28.6% of students indicated that the VLE forums enabled them to support others. Furthermore, only 22.6% of students suggested that topic-related videos on the VLE helped them to support others and only 15.8% reported that they were able to value others’ opinions as a result of watching the videos on the VLE.

However, all the teachers suggested in the interviews and also through their questionnaire responses that students used the VLE as a tool for supporting each other with difficult homework or to direct each other to good revision sources. As noted in section 4.4, some

students even went to the extent of making video clips for use by peers. Referring to how VLE forums in particular were used to demonstrate empathetic tendencies, one teacher indicated in the anonymous questionnaire that forums encourage students to think about how other people feel when they comment on an idea. Another teacher, Mr Boyd, was of the opinion that because the forums were used to support each other, students developed a sense of how others in the class were feeling. Furthermore, Mr Boyd asserted that he used videos which do not ‘focus just on facts but also on the human side of an issue so that students could explore/think about life in other people’s shoes’. He added that such actions, in his opinion, helped to develop the students’ own sense of being and a sense of empathy for others.

The examples analysed in this section indicate that although few students think that they were able to show empathy as a result of using the VLE tools, those that did showed profound empathy. As mentioned in Chapter 2, profound empathy involves personal levels of care and concern. It is not superficial; rather, it is deep-seated and forms the basis of positive relationships (Cooper, 2010). This is the kind of empathy that teachers perceived their students as demonstrating. These views contradict those that were expressed in the students’ questionnaire, however taken together, teachers’ views and students’ actions indicate that VLEs can help students to understand and support others.

#### **4.8.4 VLEs can support positive interpersonal relationships**

As Mazer et al. (2007) observed in their research, the current study revealed that the strategic adoption of VLE tools provided students with several opportunities to develop personal relationships. This was underpinned by opportunities to collaborate, share information and resources. The use of forums for example, offered the students opportunities to respond to queries from others as well as opportunities to seek help from others. Teachers’ questionnaire responses showed that ‘students enjoyed supporting others’ and that they could see ‘pupils go out of their way to support others and answer their questions’. Such behaviour, it was shown, encouraged respect and trust amongst peers and therefore contributed to the positive relationships observed in class.

In the same way as Guzdial and Carroll (2002) observed in an earlier study, some teachers noted that occasionally students failed to interact with others on the forums. According to one such teacher:

When I tried it [VLE forums] with bigger classes it hasn't worked so well. This is because people either choose to read the one [post] below and then they will say something like: yeah what she said... and so it doesn't actually say anything... and then someone goes on there [forum] and they've got a whole page of 'what she said' or 'yeah I think that so and so said this is completely irrelevant'... and so they won't be bothered to scroll down the whole page of rubbish to get to the actual points that are in there (Ms Cashmere).

Mr Simons (Content Developer and VLE facilitator) agreed with this observation by arguing that 'students may post their own responses to a question, but rarely respond to others'. Although these observations are important and need further consideration, it is possible also that they can lead to just the surface interpretation of what actually happens in VLE forums; for, as noted by researchers such as Mason (2011) and Nandi et al. (2012), students may choose to be spectators rather than active participants in the VLE forums. So, although they may not be seen as actively contributing to the featured discussions, they may be reading and learning from others' posts. Consequently, the argument that there is a need for considerable moderator participation in VLE forums (Mason, 2011) and also, that teachers must identify new ways to express passion for what is being discussed (Andresen, 2009), holds true. And these need to be done in non-threatening (in other words, transparent, fair and re-assuring) ways so that students are not discouraged from using the VLE altogether.

The data analysis also shows that in cases where the VLE forums had been perceived to be successfully used teachers, particularly the music, mathematics and religious education teachers noted that using forums encouraged reflexivity and classroom discussions. They observed that classroom time was maximised and students were able to form positive relationships with each other.

Teachers remarked also that the nature of feedback that students were encouraged to give helped in fostering positive classroom ambience. This is because the feedback they gave each other was expected to be constructive despite it being critical. The students themselves indicated that the feedback they had received encouraged them to listen carefully to others' opinions (46.6%); encouraged them to share their own opinions with others (42.9%); encouraged them to work harder (51.9%) and encouraged them to discuss their work with peers (49.6%).

It became apparent from the interviews, focus groups and questionnaires that the use of video resources led to students trusting and respecting each other's opinions and consequently effective classroom dialogue. Teachers who had embedded videos into the VLE prior to lessons indicated that students were empowered with information relating to topics to be discussed. As a result they were of the view that 'classroom discussions flowed quicker'. They added that the classroom environment exuded confidence and calmness; that, students seemed to listen more carefully and frustration resulting from students not understanding the task being discussed was reduced. Students confirmed these assertions in their responses to the questionnaires. Only 3 out of 130 respondents indicated that they were unlikely to listen in class if they watched a topic related video prior to lessons.

#### **4.8.5 Time**

Every teacher who was interviewed in this research study acknowledged the potential of VLEs in helping to provide flexibility in the learning process. They all attested to the fact that VLEs can provide new pathways to teaching and learning. That, VLEs help in providing support for those students who get lost in the process of taking notes; those who are unsynchronised with the pace of the teacher and therefore become bored or inattentive in class; those who have different learning needs and the different levels of prior knowledge that students may have (Limniou and Smith, 2010).

Nevertheless, teachers cited in the interviews and also in the focus group discussions that they were limited in their ability to exploit the VLE's potential to enhance the learning experiences of students due to the time constraints associated with their work. They referred to the lack of time to learn about functionalities of the VLE, to experiment with them and to create pedagogically stimulating resources as a major barrier to the adoption and use of the VLE. These assertions were supported by Ms Isik who remarked that VLEs could be very time-consuming to set up and to maintain. Additionally, an English teacher (Ms Dosso) for example, observed that in terms of using VLE tests, she found that '[it] didn't interest me or pay me back in terms of the time needed to do them'. In other words, she found traditional methods of doing tests more rewarding and hence was not convinced about the need to change her practice in relation to that. Indeed, this can be said of other teachers too (for example, Ms Cashmere, Mr Boyd and Mrs Laing); for if teachers cannot see the potential benefits of adopting a tool, then the chances of them spending their already constrained time on such a tool will be limited. This resonates with Pajares' (1992) views about teachers' beliefs. According to Pajares (1992), teachers are influenced by their beliefs in relation to their perceptions, judgements and teaching practices. And this implies that there is a need for clear conceptualisations in relation to the use of VLEs in supporting the development of students' Emotional Intelligence if success is to be achieved in that area.

#### **4.9 Chapter summary**

This chapter provides a description and analysis of data collected in the research process. It started with a description of the strategies used for categorising data into codes, followed by in-depth analysis of findings from the individual methods of data collection used. Following this, the common themes generated from a cross-method analysis of research findings were presented. Thus, the latent meanings of the findings were made apparent.

In the next chapter, the findings of the research study are discussed in relation to the research questions posed in Chapter 3. A framework designed to help educators to support the development of secondary school students' Emotional Intelligence through the use of VLEs

is subsequently proposed. Conclusions are then drawn and directions for future research suggested.

# Chapter 5

## Discussions and conclusions

### 5.1 Introduction

As indicated from the outset, this research study aimed at investigating from the perspective of secondary education, how VLEs should be designed and used in order to support the Emotional Intelligence of secondary school students. Therefore, in earlier chapters, the notion of intelligence was explored so that the concept of Emotional Intelligence could be put into perspective. The adoption and use of VLEs within education was subsequently explored in Chapter 2. As a result of undertaking such activities, a research strategy for guiding the current study was established and followed in order to gather meaningful data that would help to answer the research questions posed in Chapter 3. Chapter 4 presented an analysis of the data collected in the research study and also highlighted the emerging themes.

In this chapter, findings from the research study are discussed in relation to the research questions and propositions. Following this, a framework for using VLEs to support secondary school students' Emotional Intelligence is proposed. Its enablers and inhibitors are discussed, after which, conclusions are drawn from the research study and recommendations for future studies suggested. The chapter concludes with a reflection on my journey in relation to undertaking this professional doctorate.



## **5.2 Discussions in relation to research questions**

In section 3.4.1, it was stated that research questions are central to any research study. If research questions are necessary, then equally, there must be a need for answers to such questions. Otherwise, the argument for having research questions will be undermined. Hence, it is essential that researchers provide clear and straight-forward responses to their research questions in order to enable readers to assess whether: a) The research study achieved its aim and; b) if the findings of the research study relate to the research questions posed. With these in mind, the following sections provide possible answers to the study's research questions by drawing upon data collected throughout the research study. These are subsequently discussed in relation to the extant literature in order to affirm or dismiss the findings.

### **5.2.1 How does the use of VLE tools impact upon students' Emotional Intelligence and classroom ambience?**

Data obtained from the current study shows that when used strategically VLE tools have the potential to impact positively on students' Emotional Intelligence as well as classroom ambience. To explain the basis of this assertion, it is necessary to revisit Salovey and Mayer's (1990) classic definition of Emotional Intelligence. Salovey and Mayer (1990), posit that an emotionally intelligent person is one who is able to discriminate between the negative and positive effects of emotions as well as use emotional information to guide his or her thinking and behaviour.

Throughout this research study, teachers and students had opportunities to interact with VLE tools which have the capacity to stimulate emotions. Interactions within VLE forums, recording a lesson and embedding it into the VLE, giving and receiving feedback all constitute practices which can heighten emotions amongst users. Where used successfully, in mathematics and music for example, it was noted that participants of the VLE forum

responded to each other politely and in an affirmative manner. As a result, participants reported that positive emotions such as happiness, hope, pride in one's work and abilities, as well as positive outlook were promoted. It also came to light that students were keen on using the VLE forums for information, support and sharing. Similar to the observations made by Bergmann and Sams (2013), teachers who trialled the tools, indicated that classroom time was often maximised. Adding that students' demonstrated great enthusiasm and confidence in their work and were seen to be maturely discussing in class what they were expected to learn (Table 8; Ms Smith, Mrs Laing). These observations represent a positive outcome for this research study and for the use of VLEs in schools to support students' Emotional Intelligence. However, it was evident that not all teachers (particularly those who were not involved in this research study as key informants) trialled the VLE tools as often as one would hope. As a result, the positive outcomes reported are mainly the experiences of a small proportion of teachers (mainly music, English, mathematics and science teachers).

The data also showed that even the key informants struggled on occasions to successfully use some of the VLE tools. For example, students in SFG: 4 and SFG: 6 observed that creating and embedding video resources correctly appeared to be a challenge for some of their teachers. According to them, this was evident in the fact that occasionally videos did not play and links to other resources were not functioning. Some teachers also complained about the VLE itself. Referring to the lack of flexibility associated with copying homework content from one classroom to another, for example, a teacher expressed his frustration by asserting that 'I think as a system it is very weak to not be able to create a page and then put it on as many rooms as you wish' (Mr Christian). Furthermore, it was apparent that not all students participated fully in the VLE forums – as in Guzdial and Carroll's (2002) research – or used the resources provided prior to lessons (Ms Casmere; Ms Dosso; see also, Bergmann and Sams, 2013). Potentially, students who have worked hard prior to lessons may be frustrated, angered or discouraged to use the VLE resources in future if they observe that their peers who do not use the resources consistently disrupt or slow down the learning process. This indicates that for VLE tools to be successfully used in developing students' Emotional Intelligence and positive classroom ambience, teachers must have a strategy for identifying which students are not using particular tools, and must be willing to discuss the potential

benefits of using those tools with such students. This requires that the teachers must themselves be committed to the development of their own skills in relation to using the VLE tools, as they are more likely to be successful in inspiring their students if they (teachers) are confident and capable users of the tools.

As mentioned in Chapter 4, students showed a good sense of emotional and cognitive maturity when they worked within the VLE (Appendix 6). Indeed, experts in the field of Emotional Intelligence such as Goleman (1995) and Mayer and Salovey (1993) do not refer to the word ‘maturity’ in their definitions. Nevertheless, in instances where other’s behaviours could have aroused negative emotions such as anger, frustration, disappointment or distress (section 4.8.2), it was shown that by acting maturely, students were able to ‘discriminate’ between the potential causes of positive or negative emotions. Therefore, they were able to ignore unnecessary distractions and instead concentrated on those activities that were beneficial to them. In relation to using online tools such as VLEs, it may therefore be necessary to include ‘*maturity*’ in the definition of Emotional Intelligence. In other words, Emotional Intelligence within online settings may perhaps be defined as the ability and/or **maturity** (emotional and cognitive) to discriminate between the negative and positive effects of emotions when completing tasks online. This way, the need for people to act maturely in online settings such as the VLE will be emphasised and the chances of promoting emotionally intelligent behaviour enhanced.

The fact that video resources and positive feedback helped students to grow in self-confidence and self-esteem was perceived by some colleagues (for example, Ms Noble, Ms Smith, Mr Johnson, Mrs, Laing, TFG:1, TFG:3) and students in SFG:1, SFG:4, SFG:7, SFG: 8, SFG: 10 as a driving force for promoting positive classroom ambience. The students also indicated in their questionnaire responses that they were encouraged to listen carefully to others’ opinions (46.6%), encouraged to share their opinions (42.9%) and encouraged to work harder (51.9%). Although in each of these questionnaire responses, with the exception of the final point, fewer than half of the students provided positive responses, taken together, the data collected in the current research showed that Emotional Intelligence and classroom

ambience are positively impacted by the successful adoption of VLE tools for feedback, collaboration and support.

A classroom within which students are able to listen to each other, accept each other's opinions and work harder together towards common goals can be said to be a supportive one. Underpinning supportive behaviour on the other hand, is the ability to discriminate between the effects of positive and negative emotions arising from other people's feedback; self-confidence; self-awareness and the motivation to pursue excellence. Hence, it has been shown by Landau and Gavriel (2011) that supportive classroom environments are positively related to Emotional Intelligence. Considering that VLE tools were used to support such qualities suggests that students' Emotional Intelligence abilities and hence classroom ambience can be enhanced by the strategic adoption of a VLE.

### **5.2.2 How should we work within the VLE so as to develop students' Emotional Intelligence?**

On the basis of the definitions provided by Salovey and Mayer (1990) and Goleman (1995), developing a person's Emotional Intelligence requires that he or she is engaged in activities that enables them to be self-aware; to self-regulate their emotions; to develop their social skills; to be motivated to undertake tasks and empathy (SSSME). This implies that for educators to promote the development of their students' Emotional Intelligence through the adoption and use of a VLE, they must look out for those tools that support their students' SSSME.

This research study has shown that secondary school students' SSSME can be developed by strategically using a combination of the following VLE tools: videos, forums, and tools for leaving feedback such as the test tools or hand-in folders. The study showed that three types of videos could be used to enhance SSSME. First, and at a basic level, teachers and/or their students can upload appropriate video resources from sources such as YouTube and

TeacherTube to their school's VLE. The purpose for which such videos may be used might include, preparing students for next lesson, recapping what had been learned in class or supporting students with their homework. If such resources are carefully chosen, there is a high probability that students' confidence, motivation for learning and collaboration with peers will be increased thereby leading to the development of their Emotional Intelligence as previously discussed.

The second type of video resources, those in which the class teacher is featured, is of even more significance. As with the other types of video resources that can be used within the VLE, it was noted that using these types of resources led to improved confidence, motivation for learning, resilience, independence and self-regulation for some students. In addition, it was brought to light that such video resources had the potential to facilitate learning beyond the physical classroom environment, by serving as useful aids for parents and guardians to effectively support students with homework. As mentioned in the previous chapter, such video resources have the potential to also encourage rapport between teachers and learners, as well as promote discussions in subsequent face-to-face classroom sessions.

The third type of video resources (those in which students are featured) appears to be the most powerful in supporting the development of students' Emotional Intelligence. This is in spite of the fact that there is the danger of students competing to be in the spotlight of such videos as suggested by a teacher participant (Ms Smith). Apart from offering students similar benefits as the other types of video resources described above, this resource offers to students, opportunities to reflect upon their own words and behaviour in the video within which they featured. Therefore, they are able to develop self-awareness and self-regulation strategies which undoubtedly, become useful in their dealings with other people.

Students could also be asked to keep a reflective journal detailing how and what they have learned about themselves as well as the extent to which they have achieved SSSME by drawing upon their experiences in relation to using forums, videos or feedback. This way,

their attention will be constantly driven towards key Emotional Intelligence attributes such as the self-awareness of their feelings and thoughts, as well as the impact of their words and actions on others. The classroom teacher can subsequently review the reflective journal, offering regular feedback and assistance where needed. Such guidance, Hove and Corcoran (2008) argue, is likely to create a better learning experience than a VLE in which the classroom teacher is perceived to be distant.

Regular short tests designed to boost students' confidence, motivation for learning and resilience could also be a regular feature on the VLE. These should be set to auto-mark and provide feedback where possible to reduce teacher workload. However, they should be closely linked to learning outcomes in order to make it possible for students and teachers to track progress. It is important that the tests contain appropriate levels of challenge and that assessments are more supportive and useful for students. This is to ensure that students are not discouraged. Rather, the gradual increase in the difficulty of tasks to be undertaken should help them to enjoy the learning experience, improve their understanding, develop their resilience, self-awareness and self-motivation. It must be noted though that not every learner is able to adapt to independent learning strategies. Therefore, it is necessary to make the learning an interactive process by providing links to VLE forums where students can easily interact with peers, teachers and other learning resources. Establishing such support networks will help to ensure that all students are supported and encouraged, have a sense of belonging and are hopefully, motivated to excel academically and in their social lives.

### **5.2.3 What should be the content of the VLE?**

For students to be successful learners, researchers such as Parker et al. (2004) and Goleman (2008) have observed that the teaching of Emotional Intelligence is paramount. This suggests that successful learning within a VLE as with traditional modes of teaching and learning requires an Emotional Intelligence input.

As part of this research study I contemplated the best way of offering Emotional Intelligence training for secondary school students through a VLE. I wondered if such training should be made explicit, and whether or not Emotional Intelligence training should be offered separately from the teaching of the curriculum content. Although there are benefits to be derived from such an approach, it was apparent that adopting that approach would pose a number of problems. For example, when should the training be done? Who should provide the training? How will school leaders ensure the commitment of the participants if such training do not form part of curriculum requirements?

Although it would be possible to a fair extent, to address these issues, it was apparent from the data analysis that the approach used in this research study is superior. That is, supporting the development of students' Emotional Intelligence abilities through the delivery of the curriculum. Jaeger and Eagan (2007) had adopted a similar approach with 854 first year university students and reported successes. Moreover, this seems a viable approach because students' emotional well-being is deeply bound up in the process of teaching and learning, and community building in schools and classrooms (McLaughlin, 2008). Therefore the strategy of Emotional Intelligence development through the delivery of the curriculum used in this research study has been identified as the preferred approach taken by policy makers (Gillies, 2011).

Gillies (2011), posits that 'education policy has sought to inculcate children with emotional skills through the taught curriculum in schools' (p. 187). Perhaps, this is due to experiences in relation to how Personal, Social and Health Education (PSHE) has been taught in schools. According to McLaughlin (2008), the history of PSHE in the UK shows that separating training from the aims and processes of mainstream curriculum can lead to the process struggling for status and not being taken seriously. Given this background, and the significance of Emotional Intelligence training in schools as suggested by Parker et al. (2004), Petrides et al. (2004) and Goleman (2008), it is imperative that Emotional Intelligence training for students is not allowed to fall in a similar trap as did PSHE. This also means that teachers may need structured professional development sessions aimed at the

development of a shared view of Emotional Intelligence and strategies for promoting Emotional Intelligence in every student. Additionally, Higgins et al. (2012) assert that on-going support to evaluate the impact on learning is required in order to ensure that digital technologies and/or innovations are successfully embedded in schools.

Amongst the potential benefits to be derived from linking Emotional Intelligence training to the aims and processes of mainstream curriculum are:

- Providing Emotional Intelligence training without compromising on curriculum delivery
- Opportunities for students to develop intellectually and emotional intelligently
- No need for adjustments to teaching timetables
- No need to recruit additional staff
- Developing teachers' and students' awareness of Emotional Intelligence

The current study proposes therefore, that a VLE intended to support secondary school students' Emotional Intelligence should be designed to fit around the curriculum areas and must be used for teaching and learning. Alongside these, the VLE should enable students to collaborate on tasks and also offer them opportunities to support each other. Such collaborative learning opportunities will without doubt, help them to collaborate with their peers on cognitive tasks, to value being part of a group, and also to appreciate the social and interpersonal aspects of learning (Mullins *et al.*, 2013).

On the basis of observations made in this research study, it is asserted that although VLE forums can be adopted for peer support, their use should be extended beyond the mere sharing of views. For example, they should be used to share websites and digital work such as videos, audios and images. Teachers should also encourage their students to contribute



presentations in the form of video resources in which students are featured. These should be assessed not only in terms of curriculum content but also in terms of the quality of presentation, use of language and emotional engagement.

#### **5.2.4 How should a VLE intended for secondary school students be designed in order for it to support Emotional Intelligence?**

On the basis of the arguments presented in this research study it can be seen that a VLE intended to support secondary school students' Emotional Intelligence must without doubt include tools that encourage discussion, support, self-awareness, self-regulation, resilience and positive outlook. The VLE must possess visual and aural stimulation with attention given to detail in presenting content; for:

A poorly planned or presented VLE page – one which is difficult for learners to use – is as off-putting as a poorly presented web page or a poorly planned lesson (Mr Simons, VLE Content Developer and Web Facilitator)

This statement reinforces the observations of Crook and Cluley (2009) that it is important to ensure that attention to and planning of content are prioritised so that working in a VLE does not result in heightened negative emotions such as frustration or low self-esteem. Unfortunately, this remains a major hurdle for schools, where in most cases, the design and maintenance of VLE pages have become part of the teacher's role.

The use of computer technologies in schools is indeed becoming increasingly widespread (Wellington, 2005; Crook *et al.*, 2010; Higgins *et al.*, 2012). Nowadays, teachers use computer technologies for teaching, managing behaviour, monitoring students' attendance, punctuality to lessons and progress. So, it is possible that for some teachers designing and maintaining VLE pages may not be problematic. Even so, it is unrealistic to expect teachers to assume the roles of expert film makers and software designers as part of their professional roles. At best, very few teachers – the enthusiasts (Monteith, 2004) – will design and use the VLE in exciting and innovative ways. In effect, the rate of VLE adoption and effective use is

bound to be slow. On the other hand, designing VLEs should not be the sole responsibility of software designers. Otherwise, we will continuously be entangled in the pedagogy versus technology debate (Higgins *et al.*, 2012). The way forward in designing and maintaining successful VLEs, therefore, is a joint effort between teachers, software/content developers and students as proposed in the current research. This view is strongly upheld by Galanouli *et al.* (2004) and Barak (2007) who have argued that teachers require training and support in the design of web-based courses, since teacher training courses are predominantly focused on curriculum areas and are pedagogy based.

The current study revealed that even though we had an idea of how we wanted our school's VLE to look and how it should be used, the pages in the VLE were initially uninspiring and unattractive resulting in low-level usage by both teachers and students. Following collaborations between teachers, in particular heads of departments (HODs) and a VLE Content Developer, the VLE pages were transformed to fit the school's vision as well as HOD's requirements for their departments. Consequently, teachers and students reported increased levels of satisfaction with the VLE's new appearance (Appendix 7). As a result of this transformation and the support provided by the VLE Content Developer, improved levels of usage were observed and teachers became more willing to trial new tools.

Fig 12 shows a screen shot of one of the VLE classrooms used in the current study. It suggests a simple layout with links to resources and tools designed to support teaching and learning (revision, web links, and homework tasks) as well as the development of Emotional Intelligence (forums, presentations, videos) as discussed throughout this research study.



**Fig 12: A classroom within the VLE**

It is necessary to note that it is what happens behind this screen, at the links, that indicates the success or otherwise of using the VLE. And that requires creativity, collaboration and persistence on the part of teachers and students. Cooper (2006) adds that for successful learning to be achieved, VLEs must engender positive emotions and that affective issues must be seriously considered in their design. This point of view is supported by Crook and Cluley (2009) who have suggested that the design of VLE materials must consider opportunities for the cultivation of affect and how the voice of the designer (in this case, teacher) is expressed. This means that the successful adoption and use of a VLE is dependent on the extent to which the VLE resources encourage the projection of users' emotions and views. Although all ten teachers agreed with these opinions in their questionnaire responses, they acknowledged that making the VLE intuitive to users' emotions is a difficult goal for teachers to strive for. For this reason, activities within the VLE such as forums, videos, presentations and feedback, which can elicit positive emotions, are fundamental to the successful adoption of VLEs.

The tasks to be undertaken within the VLE must also be pitched at the right level for students, ensuring that they are highly motivating and have the potential to improve students' attitudes towards subjects. In addition to these, the design shown in Fig 12 attempted to attend to affective issues by including for example, the name of the class (Methodius), the class teacher's name (Mr Donkor), links to students' work and a picture of the saint that the class is named after. Primarily, the VLE classrooms were personalised this way in order to give students and teachers a sense of ownership of the 'rooms' and thereby encourage them to work creatively within those 'rooms'. Linked to this is the fact that users will be encouraged to take pride in their 'own rooms' and work; motivated to contribute to activities in the 'rooms' and consequently, exude confidence, happiness and a positive outlook when working within them. However, it must be noted that it is important to regularly update the content and appearance of the 'rooms' so that they do not become irrelevant.

### **5.3 Key findings**

It is not my intention to dwell on the details of the findings of the current study in this section since this has been done in earlier sections. However, since the next section proposes a framework for using VLEs to support students' Emotional Intelligence, it is essential to outline briefly the key findings of the research study here. The data analysis brought to light the following:

- VLE tools can be used to facilitate revision and peer-support
- Emotionally intelligent behaviour in class or in a VLE is underpinned by emotional and cognitive maturity
- Strategic use of VLE tools can promote collaborations and positive relationships
- Strategic use of VLE tools can promote self-esteem, self-confidence, self-awareness, self-regulation, motivation and empathy
- Teachers require time and support to successfully develop as well as use VLE tools to meet the needs of students

## 5.4 A framework for using VLEs to support Emotional Intelligence

Due to the huge surge of interest, policy debate and academic research around the concept of emotions in schools (Greenhalgh, 1994; McLaughlin, 2008; Gillies, 2011), it is clear that a framework to support the development of secondary school students' Emotional Intelligence is necessary. In particular, the fact that using VLEs to support Emotional Intelligence training is as yet not a developed area in educational research means that a framework based on the findings of this research study will be very useful for educators and future researchers, for practice and for guidance in their research journeys respectively.

Developing a framework for the current research was based on the process of inductive reasoning. Burgess et al. (2006) posit that this approach to deriving meaning starts with data gathering, and then, on the basis of data analysis, 'you would develop your own theoretical models in conjunction with available literature on that topic' (p. 47). Burgess et al. (2006) add, that an inductive approach to developing theoretical frameworks 'is particularly useful where the literature around your chosen research is relatively underdeveloped' (p. 47). And this gives more impetus to my decision and strategy for developing a framework.

In considering what the main aspects for the framework should be, the findings of the current study were consulted and then compared with the findings of previous research studies. This brought to light the following as key variables for developing secondary school students' Emotional Intelligence through the use of VLEs:

- Using VLE forums
- Using videos within the VLE
- Effective use of feedback
- Homework diary – a link to homework and in which videos, forums or tests may be embedded

➤ Online subject knowledge testing

The inter-relationships between the five key variables of the framework are shown in Fig 13 below.

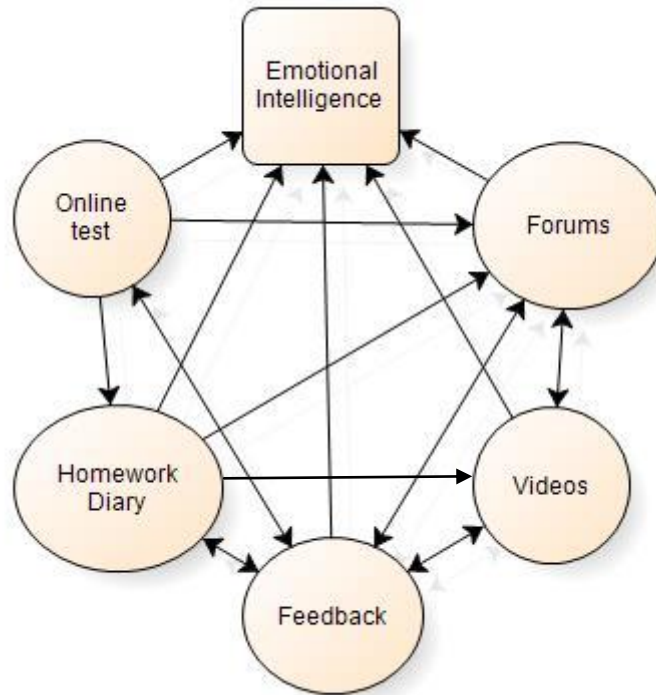


Fig 13: Framework for developing secondary school students' Emotional Intelligence using VLEs

### 5.4.1 Explaining the framework

The framework suggests five inter-related activities that need to underpin the practice of teachers if they are to help their students to develop Emotional Intelligence attributes. The arrows show how the variables are related and the extent to which they depend on each other. Double-ended arrows have been used to show interdependence between variables. It can be seen that there is an arrow pointing to Emotional Intelligence from each of the five variables. This highlights the primary proposal of the framework, developing the Emotional Intelligence

of secondary school students through the use of VLEs requires the effective use of all the five variables in the model.

It is easily recognisable that the numbers of arrows pointing to the key variables vary. This emphasises two things: Firstly, it shows which other variables that a particular key variable depends on for successful use. Secondly, it gives an indication of the relative importance of a key variable to the framework. In other words, it is being proposed for example, that the use of forums and feedback represent the two most important key variables within the framework. Both are connected by four arrows (to the other key variables), indicating that they support or can be supported by the activities undertaken within the other key variables.

What is being illustrated here is that a VLE forum, for example, can be used to provide guidance and support for students as part of the homework they will be required to do. Used this way, students are able to access support from peers and teachers as well as provide support and information to others. As mentioned in Chapter 4 (section 4.4) and also in the earlier sections of this chapter, using VLE forums in this way can lead to the boosting of students' self-confidence and self-esteem as well as SSSME. The framework also suggests that a VLE forum should be used to provide a platform for students to support each other with online tests; to discuss issues raised in a video resource; and to provide students with positive feedback in relation to their academic achievements as well as contributions to discussions.

Compared with the setting up of online tests, or the recording, editing and uploading of video resources, using forums and feedback within a VLE are two activities that do not require a lot of effort to set up. Yet they have enormous potential in terms of helping to support Emotional Intelligence development in secondary school students. This point of view found some congruence amongst all the teachers who were interviewed and it was apparent that these represented activities that participants more readily engaged in within the school's VLE. All ten teachers who were interviewed in the current research reported 'immediate'

benefits in terms of providing support, starting a discussion, exploring a new topic or providing a platform for expressing opinions. An English teacher suggested for example, that unlike the tools for creating tests, the VLE forums paid her back in terms of the time needed to do them. She added that:

What has also been really successful in terms of Emotional Intelligence is that when I have a forum, students can contribute in a way that is particularly encouraging for another student because they are using their own, peer language; it does not have the usual filter that speaking in class in front of a teacher, formally, does. The formal environment can be more restrictive and the peer feedback on Fronter [VLE] is sometimes really appropriate (Ms Dosso, teacher).

This statement not only emphasises the benefits of using VLE forums as discussed in Chapter 4, it also provides an indication of the success factor in relation to using VLE forums to support Emotional Intelligence. The statement also offers support to an observation by Liu et al. (2010), that introducing interactive elements such as VLE forums enables VLE users to communicate and engage interactively with each other. Limniou and Smith's (2010) research, though undertaken within the further education sector, also offers support for the use of forums and feedback in VLEs. According to Limniou and Smith (2010), opportunities to receive quick feedback from tutors and to use discussion forums represented the most useful VLE components for students. Consequently, they reported that 83.33% of the 108 students who took part in their research considered forums as the most useful VLE component whilst 55.56% opted for learning through feedback.

Apart from its connections with the other key variables, the use of feedback in VLEs underpins the successful adoption of every key variable in the proposed framework. This is my reason for placing 'feedback' at the base of the diagram in Fig 13. In other words, the point I want to project is that the successful use of feedback in VLEs is the basis upon which the VLE tools proposed can be effectively used to develop Emotional Intelligence. For, positive performance feedback yields higher motivation and engagement whereas negative feedback has the propensity of reducing motivation and promoting frustration (Mullins *et al.*, 2013).



The absence of a connection (arrow) between videos and online tests in the proposed framework does not suggest that videos cannot be used to support tests or vice versa. The connection is absent because it would be unrealistic to expect teachers to create video resources that related to every test that they put on the VLE. That said analysis of the fieldwork data showed that well-tailored video resources relating to tests, when put on a VLE, can lead to effective revision, successful learning and significant improvements in achievement for most students. This in effect can promote confidence and stir up positive emotions, as well as the motivation to try harder or contribute positively to subsequent classroom discussions (Stiggins, 2005). However, the findings of the current research have shown that using VLEs in this way limits students' capacity to discover information for themselves and consequently can reduce their ability to become creative learners.

It is important to note that the significance of the Homework diary in the framework is neither limited to work that students have to do at home, nor is it just about creating opportunities for students to give or receive support from teachers and peers. The primary purpose of the Homework diary within the framework is to ensure that everyone enters and uses the VLE. This is because in schools teachers are supposed to set homework regularly and students are expected to complete such homework. Adopting and enforcing the use of a Homework diary within a school's VLE, therefore, serves as a means of ensuring that teachers and students use the VLE and consequently, are exposed to its affordances as well as other useful resources within it.

#### **5.4.2 What are the enablers and inhibitors?**

The success of online learning systems such as VLEs depends on those factors that influence users' acceptance and usage of the system (Tarhini *et al.*, 2013). Cenfetelli and Schwarz (2011) refer to such factors as *enablers*. According to them, *enablers* are underpinned by the usefulness, reliability and flexibility of a system. On the other hand, Cenfetelli and Schwarz (2011) refer to those factors that inhibit the acceptance of technology as *inhibitors*. In this

section, a brief discussion of the factors perceived as *inhibitors* or *enablers* to the adoption and use of VLEs for supporting Emotional Intelligence training is provided.

It was apparent from the findings of the current study that for a VLE to be used to support Emotional Intelligence it must first be embraced by its users. This in turn depends on the perceived ease of use of the VLE and how well the user interface supports educational contexts (Liu *et al.*, 2010). Findings from the current study offer support for this argument by indicating that the perceived ease of use of VLEs by teachers, TAs and students is a primary *enabler* for adopting the framework proposed in section 5.4.1. This observation results from participants' assertions and the results of a staff survey conducted in April 2011 (Appendix 7). In that survey, 86.2% of teachers and TAs indicated that they were encouraged to use the VLE because of its perceived ease of use. Teachers and TAs also reported that 'access to support' is a major factor that influences their decision to accept and use the school's VLE. Furthermore, the successful use of reflective journals represents another key *enabler* for using VLEs to support Emotional Intelligence. This is because an effective reflective journal enables users to recognise patterns in their work; to consider impacts on their emotions; to establish causal links; and to discriminate between the positive and negative effects of their emotions.

Similar to observations made by Limniou and Smith (2010), findings of the current research revealed that staff workloads; their familiarity with the use of the VLE; and the lack of time to experiment with VLE tools represented the main *inhibitors* to using the VLE tools proposed. It was apparent also, that as Wellington (2005) and Shin *et al.* (2013) had observed, user resistance is a crucial *inhibitor* that needs to be addressed if the proposed framework is to be successfully implemented across a department or school. Table 9 summarises these views. It outlines the key *enablers* and *inhibitors* associated with adopting and using VLEs to support teaching and learning as well as Emotional Intelligence in schools as observed in the current study.

<b>Enablers</b>	<b>Inhibitors</b>
<p><b>Perceived ease of use:</b> the adoption and use of a VLE to support Emotional Intelligence is likely to be successful if VLE content is easily accessible, meaningful and extends classroom learning.</p> <p><b>Access to support:</b> in order to bridge the gap between pedagogy and technology, and to promote confidence for trialling VLE tools, it is imperative that teachers have easy access to support in relation to creating and maintaining exciting, cognitively stimulating, as well as collaborative environments within the VLE.</p> <p><b>Reflective journals:</b> this can serve as an important platform for encouraging students to revisit and to reconsider their behaviour and/or emotions when they work in a VLE.</p>	<p><b>Time:</b> setting up and maintaining virtual classrooms can be very time-consuming for teachers. Therefore, teachers are unlikely to continue using VLE resources if they think the VLE does not pay them back in terms of the time needed to set things up.</p> <p><b>Resistance towards innovation:</b> due to teachers' lack of technical expertise in relation to VLEs, and the fact that VLEs are generally unintuitive, it is often difficult to understand what one needs to do. Working within a VLE can therefore be daunting for teachers. Often, this leads to lack of motivation in using VLE resources.</p> <p><b>Workload:</b> the heavy workload associated with teachers' roles, means that teachers are often not interested in trialling a new technology if it has not been proven to have clear benefits over traditional practices.</p>

**Table 9: Table of enablers and inhibitors**

## **5.5 Strengths and limitations of the current research**

A major strength of this research study has been that its findings were underpinned by the experiences and views of key stakeholders directly involved with teaching and learning of students in one secondary school in London. The inclusion of teachers, TAs and students in the research significantly strengthens the findings projected and represent the views of the school community. In addition, the perceptions of VLE Content Developers and Software Designers helped in affirming the views held by teachers, TAs and students. These

perceptions formed the basis of the proposed framework for supporting the development of secondary school students' Emotional Intelligence. Hence, the proposed framework has been driven by pedagogy as opposed to technology (Higgins *et al.*, 2012; Hove and Corcoran, 2008; Trinick, 2007; Cooper, 2006). Furthermore, findings of the current research demonstrate the need for greater attention to be paid to the use of VLEs to support Emotional Intelligence.

As with all small-scale research, a number of limitations were inevitable. The fundamental one being the difficulties associated with attempting to generalise the findings of the research. As discussed in Chapter 3, generalising case study findings has quite often been seen as problematic. This is due to the fact that each case is different, and also because such studies often draws upon small samples (Atkinson and Delamont, 1985; Yin, 1994). These observations are true for this research study and are compounded by the fact that the research took place in an all girls' school, one which is faith-based, and in which behaviour is relatively unproblematic. Consequently, one is immediately confronted with the question of whether or not the findings of the research will be consistent with similar studies in an all boys' school; a mixed school; a non-faith based, and/or more challenging schools. As a result I am not advocating that the findings should be generalised to all schools. It was clear nonetheless, that adopting the case study strategy for the current research, allowed for rich and in-depth data to be collected about the context studied. Hence, like Bassey (1999) and Pratt (2003), I am asserting that this is what happened in this case, and that other researchers can consider how they may apply the findings to their own situations in order to bring about desirable changes.

Another limitation is in relation to conducting insider research. Throughout the research study I was confronted with the issue of how to know when the respondent is telling the truth (Dean and Whyte, 1969). As the teacher responsible for developing and promoting the adoption and use of the school's VLE I was concerned that on occasions respondents told me what they thought I needed to hear – either to make me feel good, or perhaps to mask their inability to trial the VLE tools sufficiently. I was of the view that some participants gave

anticipatory accounts as opposed to actual experiences of using the VLE. The opportunity to access VLE content and also to corroborate findings with those from other sources therefore proved invaluable. For example, through access to VLE rooms and content, it was possible to ascertain the music teacher's assertions in relation to how VLE forums were used to encourage students to share ideas and to listen to music imaginatively (see Figs 6 and 7). In addition to these, comparing teacher and TA data with those obtained from students helped in validating the findings of this study.

Finally and perhaps most importantly, I found that due to my role in relation to the school's VLE I had already formed a positive view of the potential of VLEs to support Emotional Intelligence. This made data analysis and discussion potentially problematic considering that the data collected presented little disapproval for the way the school's VLE was used in the current research. Asking colleagues in the school to read through my reports and findings as well as help with the coding of data, I hope nonetheless, that I succeeded in projecting a fair and balanced view of the data collected.

## **5.6 Recommendations for future research**

Given that this research study was undertaken within the context of a girls' school, it will be of benefit to the educational system if future studies are undertaken in a boys' school. This way it will be possible to compare and contrast the Emotional Intelligence behaviour within online learning environments of boys with those of girls. For a more holistic picture, this research study may form the basis of future research studies in non-faith (girls', boys' or mixed) schools. Future researchers may also consider using a pre-test to examine Emotional Intelligence behaviour within VLEs prior to adopting the proposed framework and then a post-test after. Approaching the research study in this way will help to establish whether or not the strategies proposed in this thesis actually impact on the Emotional Intelligence of secondary school students. Also, undertaking a similar study in a collection of case study schools, particularly those situated in areas of social and economic deprivation, where

arguably, students have greater emotional and academic needs, may help in providing a broader perspective about the topic.

## **5.7 Conclusion**

There is no doubt that human interactions are changing from face-to-face to being increasingly electronic (Gorry, 2009). Unfortunately, within electronic environments such as the VLE, access to body language and cues to learners' intent is often limited (Delahunty, 2012; Andresen, 2009). Stimulating joy, resilience and motivation when learning within a VLE therefore remains a challenge. This is particularly the case when dealing with students of secondary school going age. At that age, learners may lack the motivation for self-directed learning and the resilience to continue with a task when they encounter difficulties. The risk therefore exists that student achievement may drop as we delve deeper into the world of virtual learning.

Meanwhile, we are also being increasingly made aware of the important role that Emotional Intelligence plays in education. Research studies undertaken by Parker et al. (2004), Petrides et al. (2004) and Goleman (2008), have all suggested that our students will be better equipped to succeed with their academic lives if they are provided with adequate Emotional Intelligence training. Some have argued that Emotional Intelligence rather than IQ is more important in predicting success in life (Allman, 1994; Cowley, 1994; Goleman, 1996, 2008).

Sadly, research studies relating to how Emotional Intelligence development may be enhanced through the adoption of VLEs remains surprisingly sparse. As a result, teachers in secondary schools and below have little to refer to in terms of providing Emotional Intelligence training and support for their students when learning takes place within VLEs. Therefore, although most secondary school students have access to online games and many reportedly enjoy playing them, they lack the motivation and/or resilience to engage in online learning.

Whereas they may have hundreds, if not thousands of friends on Facebook with whom they chat regularly, they find VLE forums meaningless and hence are often unable to sustain academic or even social discussions within them. Yet it is clear that apart from a possible decline in academic achievements, our students are likely to be trapped into emotionally unintelligent behaviours such as cyber-bullying, sarcasm and narcissism if we do not find new ways of motivating and encouraging them to work collaboratively within the secured learning environments installed in our schools.

This research study highlights some of the strategies that teachers can adopt in order to support the development of their students' Emotional Intelligence and learning through the use of VLEs. It suggests, for example, that by embedding videos into a VLE, teachers can focus on very specific issues and thereby help their students to grow in confidence within specific topic areas. On the one hand, the current study argues that making teachers' videos available on a VLE provides students with opportunities to recap what had been learnt in class as many times as required and at their own pace. On the other hand, the current study suggests that videos can be used to introduce concepts to students so that they can attend lessons confident and well prepared. Undoubtedly, these provide great advantages compared to the ephemeral nature of face-to-face feedback. It is like personal tuition (Bergmann and Sams, 2013); can increase rapport between teacher and students; and can promote profound empathy (Cooper, 2010) as well as independent learning (Coffield *et al.*, 2004). Consequently, the current research argues that students are more likely to become active learners as they would have very sound background knowledge of what is to be discussed in class. Analyses of the data collected in the study also shows that the quality of classroom discussion and learning can be enhanced and a positive classroom ambience more likely to be achieved. Added to these, the current study shows that the use of videos in which students have featured can help to draw students' attention to their personality and behaviour and hence help them to develop emotionally intelligent attributes. Furthermore, the benefits of using VLE forums, online subject testing and feedback have been discussed in relation to supporting students' Emotional Intelligence. Forums have been shown to promote self-awareness, self-regulation, collaboration, peer support and profound empathy amongst students and teachers. It has also been suggested that online subject testing can help to build

students' resilience and learning motivation. Finally, the current study argues, on the basis of the data collected and their analyses, that underpinning emotionally intelligent behaviours within a VLE is the ability to give and receive constructive feedback. Quite often, such feedback would be provided by humans through the VLE. Therefore, it is asserted that the VLEs installed in our schools are by themselves not emotionally intelligent. Rather, it is the way teachers and students harness their affordances that determine the success factor in relation to developing Emotional Intelligence. Whilst lack of time and teachers' heavy workload have been acknowledged as key inhibitors to the adoption and use of VLEs for supporting Emotional Intelligence, the observations made in this research study shows that by working together in departmental teams, teachers can gradually build up repositories of resources which in the long term would be time-saving.

To help teachers with their practice, a framework for supporting emotional intelligent behaviour within VLEs has been proposed in this research study. It is argued that the strategic adoption of VLE tools for use in discussion forums, homework support and feedback amongst others, can help in boosting students' self-confidence and motivation to use VLE resources. This is because, using the VLE tools in the suggested ways can encourage reflective and collaborative practices, trust and new opportunities for providing or accessing support. Consequently, it is argued that students will be more able to develop self-awareness and self-regulation skills as well as the ability to collaborate effectively with their peers when they work within face-to-face classroom settings or online. It must be emphasised however, that without the support of teachers who are enthusiastic and motivated in using the VLE tools, developing Emotional Intelligence via VLEs will be difficult to achieve and the efforts of others can be undermined. This original contribution to the research area is therefore very significant as it encourages more attention towards the importance of Emotional Intelligence in VLEs and future development of VLEs. It also projects the experiences and views of teachers, TAs, students and VLE Content Developers – stakeholders who are directly involved in teaching and learning within VLEs – thereby serving as a source of encouragement for others.



## 5.8 Personal reflection

The decision to embark on this doctoral level study was initially one which, for me, represented a journey towards self-actualisation. I had completed a Masters degree in Information Systems and another Masters degree in Education; therefore I felt that the next step was to obtain a doctorate. A doctorate in education (EdD), I believed would enable me to achieve the highest qualification in my chosen profession, as well as open up my mind to current debates and trends in education. I was convinced that in order to do justice to my background in information systems and education, it was necessary to undertake a kind of research study that attempted to amalgamate aspects of the training I had received in both fields. Hence, my decision to undertake research studies into the role of Emotional Intelligence in online learning environments. My thinking at the time was predominantly self-centred – what I wanted to achieve for myself.

Today, several years since I started this journey, I am filled with a sense of satisfaction and pride that I have been able to achieve what I set out to do. In the process, my thinking about research has undergone radical transformation. I have gained insights into the philosophical issues underpinning educational research as well as experience in undertaking meaningful research. Beyond these I have had opportunities to present my work to national and international audiences. For example, I presented aspects of my work at the International Federation for Information Processing (IFIP, 2012) conference in Manchester, United Kingdom as well as at the World Conference for Computers in Education (WCCE, 2013) in Torun, Poland. In addition to these, I have had opportunities to engage in academic dialogue with other experts in the field of e-learning in particular and education in general. In January 2014, I will be presenting my work at the British Educational Technologies and Training (BETT) conference in London, United Kingdom. I will also present a paper titled “Teachers’ perceptions of how VLEs may be used to support Emotional Intelligence” at the Ireland International Conference on Education (IICE) in April, 2014.

Most importantly however, I now see that after all, my EdD studies have not just been about me trying to achieve self-actualisation. It has also served as a platform for affecting pedagogy and perhaps policy in a positive way – at least, at my workplace. The concepts that have emerged from this research study, I am convinced, provides new thinking for those teachers who are committed to maximising their students’ potential through the use of online technologies. Ideas about how to help students in developing the competencies they need in order to succeed in their studies and future careers have been put forward. This research study also contributes to existing literature by attempting to bridge the gap between traditional pedagogy and digital pedagogy. It does so by emphasising how Emotional Intelligence training within VLEs designed for secondary school students may be achieved. Moreover, the findings of this research study can be expected to have interesting implications beyond secondary schools since VLEs are currently more extensively used in further and higher education.

My doctoral journey started with the reading and writing of critical accounts of other peoples’ work. This helped to shape my position on philosophical and methodological perspectives. Now I have written and I hope that my work will influence others’ practices, philosophical positions and methodological choices. I have done this research study in a girls’ school, the onus is now on someone else to try and do it in a boys’ school. Future research may also consider trialling the ideas proposed in the current study in schools situated in more deprived areas and where students are potentially more likely to benefit from the opportunities offered by VLEs to support emotional engagement and learning. This way, a more holistic picture may be obtained in relation to how VLEs should be adopted and used to support Emotional Intelligence. For:

You can play a tune of sorts on the white keys, you can play a tune of sorts on the black keys, but for harmony you must use both the black and the white

Dr Kwegyir Aggrey

## References

- Adalsteinsdóttir, K. (2004) "Teachers' Behaviour and Practices in the Classroom", *Scandinavian Journal of Educational Research*, vol. 48, no. 1, pp. 95-113.
- Ahmed, A. and Pollitt, A. (2010) "The Support Model for interactive assessment", *Assessment in Education: Principles, Policy & Practice*, vol. 17, no. 2, pp. 133-167.
- Allman, W.F. (1994) "Why IQ isn't destiny", *U.S. News & World Report*, vol. 117, no. 16, pp. 73.
- Anderson, G. (1998) *Fundamentals of educational research*, Falmer, London.
- Andresen, M.A. (2009) "Asynchronous discussion forums: success factors, outcomes, assessments, and limitations", *Journal of Educational Technology & Society*, vol. 12, no. 1, pp. 249-257.
- Argyris, C. (1981) "INTERVIEW", *Group & Organization Studies (pre-1986)*, vol. 6, no. 4, pp. 412.
- Atkinson, P. and Delamont, S. (1985) "Bread and dreams or bread and circuses? A critique of 'case study' research in education", in Shipman, M.D. (1985) *Educational research: principles, policies and practices*, pp. 26-45, Falmer Press, Barcombe, Sussex.
- Ayres, L., Kavanaugh, K. and Knafl, K.A. (2003) "Within-Case and Across-Case Approaches to Qualitative Data Analysis", *Qualitative health research*, vol. 13, no. 6, pp. 871.
- Balaam, M., Fitzpatrick, G., Good, J., and Luckin, R. (2010) "Exploring affective technologies for the classroom with the subtle stone", *Classroom Technologies*, April 10-15, pp. 1623-1632.
- Bandura, A. (1977) *Social learning theory*, Prentice-Hall, Englewood Cliffs, N.J.
- Bandura, A. (2002) "Social Cognitive Theory in Cultural Context", *Applied Psychology: An International Review*, vol. 51, no. 2, pp. 269.
- Bandura, A. and Barbaranelli, C. (1996) "Multifaceted Impact of Self-Efficacy Beliefs on Academic Functioning", *Child development*, vol. 67, no. 3, pp. 1206-1222.
- Barak, M. (2007) "Transition from traditional to ICT-enhanced learning environments in undergraduate chemistry courses", *Computers & Education*, vol. 48, no. 1, pp. 30-43.
- Bassey, M. (1999) *Case study research in educational settings*, Open University Press, Buckingham.

- Batson, C.D., Fultz, J. and Schoenrade, P.A. (1987) "Distress and Empathy: Two Qualitatively Distinct Vicarious Emotions with Different Motivational Consequences", *Journal of personality*, vol. 55, no. 1, pp. 19.
- Bazeley, P. (2007) *Qualitative data analysis with NVivo*, SAGE, Los Angeles, Calif.
- Bell, J. (2005) *Doing your research project: a guide for first time researchers in education, health and social science*, Open University Press, Maidenhead.
- Benbasat, I., Goldstein, D.K. and Mead, M. (1987) "The Case Research Strategy in Studies of Information Systems", *MIS Quarterly*, vol. 11, no. 3, pp. 369-386.
- Bergmann, J. and Sams, A. (2013) "Flipping for Mastery", *Educational Leadership*, vol. 71, no. 4, pp. 24-29.
- Biggs, J. and Tang, C. (2007) *Teaching for Quality Learning at University*, Society for Research into Higher Education and Open University Press, Berkshire.
- Black, P.J. and MyiLibrary (2005) *Assessment for learning: putting it into practice*, Open University Press, New York.
- Black, P.J. and Wiliam, D. (1998) "Assessment and classroom learning", *Assessment in Education*, vol. 5, no. 1, pp. 7-74.
- Black, P. J and Wiliam, D. (1998) "Inside the black box", *Phi Delta Kappan*, vol. 80, no. 2, pp. 139.
- Boekaerts, M. (1993) "Being Concerned With Well-Being and With Learning", *Educational Psychologist*, vol. 28, no. 2, pp. 149.
- Bogdan, R. and Biklen, S.K. (2003) *Qualitative research for education: an introduction to theory and methods*, Boston, Mass: Allyn and Bacon.
- Brackett, M.A., Rivers, S.E. and Salovey, P. (2011) "Emotional Intelligence: Implications for Personal, Social, Academic, and Workplace Success", *Social & Personality Psychology Compass*, vol. 5, no. 1, pp. 88-103.
- Brown, S. (2010) "From VLEs to Learning Webs: The Implications of Web 2.0 for Learning and Teaching", *Interactive Learning Environments*, vol. 18, no. 1, pp. 1-10.
- Brown, S.W. and King, F.B (2000) "Constructivist Pedagogy and How We Learn: Educational Psychology Meets International Studies", *International Studies Perspectives*, vol. 1, pp. 245-254.
- Bruner, J. (1997) "Comment on "beyond competence"", *Cognitive Development*, vol. 12, no. 3, pp. 341-343.

- Burgess, H., Sieminski, S., Arthur, L. and Open University (2006) *Achieving your doctorate in education*, SAGE, London.
- Campbell, A. and Scotellaro, G. (2009) "Learning with technology for pre-service early childhood teachers", *Australasian Journal of Early Childhood*, vol. 34, no. 2, pp. 11-18.
- Casey, D. (2006) "Choosing an appropriate method of data collection", *Nurse researcher*, vol. 13, no. 3, pp. 75.
- Cenfetelli, R.T. and Schwarz, A. (2011) "Identifying and testing the inhibitors of technology usage intentions", *Information systems research*, vol. 22, no. 4, pp. 808-823.
- Chabot, D. and Chabot, M. (2004) *Emotional pedagogy: To feel in order to learn. Incorporating Emotional Intelligence in your teaching strategies*, Victoria, Trafford Publishing.
- Chen, G., Lee, J., Wang, C., Chao, P., Li, L. and Lee, T. (2012) "An Empathic Avatar in a Computer-Aided Learning Program to Encourage and Persuade Learners", *Educational Technology & Society*, vol.15, no. 2, pp. 62-72.
- Cheng, Y., Chiang, H., Ye, J. and Cheng, L. (2010) "Enhancing empathy instruction using a collaborative Virtual Learning Environment for children with autistic spectrum conditions", *Computers & Education*, vol. 55, no. 4, pp. 1449-1458.
- Child, D. (2007) *Psychology and the teacher*, Continuum International Pub. Group, London.
- Chu, H., Hwang, G., Tsai, C. and Chen, N. (2009) "An innovative approach for promoting information exchanges and sharing in a Web 2.0-based learning environment", *Interactive Learning Environments*, vol. 17, no. 4, pp. 311-323.
- Cleaves, A. and Toplis, R. (2008) "Pre-service science teachers and ICT: Communities of practice?", *Research in Science & Technological Education*, vol. 26, no. 2, pp. 203-213.
- Clough, P. and Nutbrown, C. (2007) *A student's guide to methodology: justifying enquiry*, SAGE Publications, London.
- Coffield, F., Moseley, D., Hall, E. and Ecclestone, K. (2004) *Learning Styles and Pedagogy in post-16 learning: a systematic and critical review*. Learning and Skills Research Centre, London. Available from: <http://sxills.nl/lerenlerennu/bronnen/Learning> [Accessed: 11<sup>th</sup> March, 2014]
- Cohen, L., Manion, L. and Morrison, K. (2007) *Research methods in education*, Routledge Falmer, London.
- Colman, A.M. (2006) *A dictionary of psychology*, Oxford University Press, Oxford.

- Cooper, B. (2010) "In search of profound empathy in learning relationships: understanding the mathematics of moral learning environments", *Journal of Moral Education*, vol. 39, no. 1, pp. 79-99.
- Cooper, B. (2006) "The significance of affect in multi-modal communication: lessons for on-line learning", *The International Journal of Interactive Technology and Smart Education*, Special issue. Available from:  
[http://scholar.google.co.uk/scholar?q=Cooper,+B.+\(2006\)+The+significance+of+affect+in+multi-modal+communication&hl=en&as\\_sdt=0&as\\_vis=1&oi=scholart](http://scholar.google.co.uk/scholar?q=Cooper,+B.+(2006)+The+significance+of+affect+in+multi-modal+communication&hl=en&as_sdt=0&as_vis=1&oi=scholart)
- [Accessed: 17th May, 2011]
- Costley, C., Elliott, G., and Gibbs, P. (2010) *Doing work based research: approaches to enquiry for insider-researchers*, SAGE, Thousand Oaks, CA.
- Cowley, G. (1994) "Testing the science of intelligence. (Cover story)", *Newsweek*, vol. 124, no. 17, pp. 56.
- Creswell, J.W. (2009) *Research design: qualitative, quantitative, and mixed method approaches*, SAGE, Los Angeles, Calif.
- Creswell, J.W. (1994) *Research design: qualitative and quantitative approaches*, Sage Publications, Thousand Oaks, Calif.
- Crook, C. and Cluley, R. (2009) "The teaching voice on the learning platform: seeking classroom climates within a Virtual Learning Environment", *Learning, Media and Technology*, vol. 34, no. 3, pp. 199-213.
- Crook, C., Harrison, C., Farrington-Flint, L., Carmen, T. and Underwood, J. (2010) "The impact of technology: value-added classroom practice final report", *Becta*, pp. 1-93.
- Cunningham, D.L. (2009) "An Empirical Framework for Understanding How Teachers Conceptualize and Cultivate Historical Empathy in Students", *Journal of Curriculum Studies*, vol. 41, no. 5, pp. 679-709.
- Dalgarno, B. and Lee, M.J.W. (2010) "What are the learning affordances of 3-D virtual environments?" *British Journal of Educational Technology*, vol. 41, no. 1, pp. 10-32.
- Damasio, A.R. (2000) *The feeling of what happens: body, emotion and the making of consciousness*, Vintage, London.
- Daniels, L.M., Stupnisky, R.H., Pekrun, R., Haynes, T.L., Perry, R.P. and Newall, N.E. (2009) "A Longitudinal Analysis of Achievement Goals: From Affective Antecedents to Emotional Effects and Achievement Outcomes", *Journal of educational psychology*, vol. 101, no. 4, pp. 948-963.

- Dean, J. and White, W. F. (1969) "How do you know if the informant is telling the truth?" In McCall, G. and Simmons, J. (ed). *Issues in participant observation*, pp. 104-115, Addison Wesley, Reading, MA.
- Delahunty, J. (2012) "'Who am I?': Exploring identity in online discussion forums", *International Journal of Educational Research*, vol. 53, pp. 407-420.
- Denscombe, M. (2010) *The good research guide: for small-scale social research projects*, McGraw-Hill Open University Press, Maidenhead.
- Denscombe, M. (1998) *The good research guide: for small-scale social research projects*, Open University Press, Philadelphia, Pa.
- Denzin, N.K. and Lincoln, Y.S. (1998) *Strategies of qualitative inquiry*, Sage Publications, Thousand Oaks, Calif.
- Denzin, N.K. and Lincoln, Y.S. (1994) *Handbook of qualitative research*, Sage Publications, Thousand Oaks, Calif.
- Department for Education (2012), *Teachers' Standards*, Available from: [www.education.gov.uk](http://www.education.gov.uk). [Accessed: 6<sup>th</sup> September, 2013]
- Dobler, E. (2012) "Professional Learning Networks: Driving Discussions through Twitter", *Reading Today*, vol. 29, no. 6, pp. 16-17.
- Dodds, T.J., Mohler, B.J. and Bühlhoff, H.H. (2011) "Talk to the virtual hands: self-animated avatars improve communication in head-mounted display virtual environments", *PloS one*, vol. 6, no. 10, pp. e25759.
- Dong-Hee Shin, Frank Biocca and Hyunseung Choo (2013) "Exploring the user experience of three-dimensional Virtual Learning Environments", *Behaviour & Information Technology*, vol. 32, no. 2, pp. 203-12.
- Donkor, F. (2013) Using VLEs to Support Emotional Intelligence: A Secondary School Perspective, *Proceedings of 10<sup>th</sup> IFIP World Conference on Computers in Education*, (Ed. Reynolds, N. and Webb, M.), July 2-5, Torun, Poland, pp. 36-44.
- Druin, A. (2002) "The role of children in the design of new technology", *Behaviour & Information Technology*, vol. 21, no. 1, pp. 1-25.
- Edwards, D. and Mercer, N. (1987) *Common knowledge: the development of understanding in the classroom*, Methuen, London.
- Eisner, E. (1993) "Objectivity in educational research", In Hammersley, M. (ed) *Educational research: current issues*, pp. 49-55, P. Chapman Pub, London.

- Ellis, H.C., Moore, B.A., Varner, L.J., Ottaway, S.A. and Becker, A.S. (1997) "Depressed Mood, Task Organization, Cognitive Interference, and Memory: Irrelevant Thoughts Predict Recall Performance", *Journal of Social Behavior & Personality*, vol. 12, no. 2, pp. 453-470.
- Everett, R. (2009) [www] *Joint Information Systems Committee*, vol. 1. No. 1, pp. 1-2.  
Available from [http://www.jisc.ac.uk/uploaded\\_documents/bp1.pdf](http://www.jisc.ac.uk/uploaded_documents/bp1.pdf)  
[Accessed: 23<sup>rd</sup> August, 2013]
- Falloon, G. (2010) "Using avatars and virtual environments in learning: What do they have to offer?" *British Journal of Educational Technology*, vol. 41, no. 1, pp. 108-108.
- Galanouli, D., Murphy, C. and Gardner, J. (2004) "Teachers' perceptions of the effectiveness of ICT-competence training", *Computers & Education*, vol. 43, no. 1, pp. 63-79.
- Gardner, H. (2011) *Frames of mind: the theory of multiple intelligences*, Basic Books, New York.
- Gardner, H. (1999) *Intelligence reframed: multiple intelligences for the 21st century*, Basic Books, New York, NY.
- Gardner, H. (1983) *Frames of mind: the theory of multiple intelligences*, Basic Books, New York.
- Gibbs, N. and Epperson, S.E. (1995) "The EQ factor. (Cover story)", *Time*, vol. 146, no. 14, pp. 60.
- Gillies, V. (2011) "Social and emotional pedagogies: critiquing the new orthodoxy of emotion in classroom behaviour management", *British Journal of Sociology of Education*, vol. 32, no. 2, pp. 185-202.
- Gipps, C.V. (2005) "What is the role for ICT-based assessment in universities?", *Studies in Higher Education*, vol. 30, no. 2, pp. 171-180.
- Gipps, C. and MacGilchrist, B. (1999) "Primary school learners", in Mortimore, P. (ed.), *Understanding pedagogy and its impact on learning*, pp.46-67, Paul Chapman Publishing, London.
- Golafshani, N. (2003) "Understanding reliability and validity in qualitative research", *The Qualitative Report*, vol. 8, no. 4, pp. 597-606.
- Goleman, D. (2008) "The Secret to Success", *Education Digest*, vol. 74, no. 4, pp. 8-9.
- Goleman, D. (1998) *Working with Emotional Intelligence*, Bloomsbury, London.
- Goleman, D. (1995) *Emotional Intelligence: why it can matter more than IQ*, Bantam Books, London.



- Goleman, D., Boyatzis, R.E. and McKee, A. (2002) *The new leaders: transforming the art of leadership into the science of results*, Little, Brown, London.
- Gorry, G.A. (2009) "Empathy in the Virtual World", *Chronicle of Higher Education*, vol. 56, no. 2, pp. 10-B12.
- Greenbank, P. (2003) "The Role of Values in Educational Research: The Case for Reflexivity", *British Educational Research Journal*, vol. 29, no. 6, pp. 791-801.
- Greenhalgh, P. (1994) *Emotional growth and learning*, Routledge, New York.
- Guba, E. G. and Lincoln, Y.S. (1994) "Competing paradigms in qualitative research", in Denzin, N.K. and Lincoln, Y.S., (ed), *Handbook of qualitative research*, pp. 105-117, Sage Publications, Thousand Oaks, Calif.
- Guzdial, M. and Carroll, K. (2002) "Exploring the lack of dialogue in computer-supported collaborative learning, in Stahl, G. (ed), *Proceedings of the Conference on Computer Support for Collaborative Learning: Foundations for a CSCL Community*, pp. 418-424, International Society of the Learning Sciences, Boulder, CO.
- Hammersley, M. (2001) "On Michael Bassey's Concept of the Fuzzy Generalisation", *Oxford Review of Education*, vol. 27, no. 2, pp. 219-225.
- Han, H. and Johnson, S.D. (2012) "Relationship between Students' Emotional Intelligence, Social Bond, and Interactions in Online Learning", *Journal of Educational Technology & Society*, vol. 15, no. 1, pp. 78-89.
- Hargreaves, D. H. (1982), *The challenge for comprehensive school: culture, curriculum and community*, Routledge & Kegan Paul, London.
- Harvey, S.T., Bimler, D., Evans, I.M., Kirkland, J. and Pechtel, P. (2012) "Mapping the classroom emotional environment", *Teaching & Teacher Education*, vol. 28, no. 4, pp. 628-640.
- Higgins, S., Xiao, Z. and Katsipataki (2012) "The impact of digital technology on learning: A summary for the education endowment foundation", Available from <http://educationendowmentfoundation.org.uk/library/the-impact-of-digitaltechnology-on-learning>  
[Accessed: 6<sup>th</sup> September, 2013]
- Hitchcock, G. and Hughes, D. (1995) *Research and the teacher: a qualitative introduction to school-based research*, Routledge, London.
- Hockey, J. (1993) "Research Methods--Researching Peers and Familiar Settings", *Research Papers in Education*, vol. 8, no. 2, pp. 199-225.

- Hopkins, D. (2002) *A teacher's guide to classroom research*, Open University Press, Buckingham [U.K].
- Hove, M.C. and Corcoran, K.J. (2008) "Educational Technologies: Impact on Learning and Frustration", *Teaching of Psychology*, vol. 35, no. 2, pp. 121-125.
- Illich, I. (1970) *Deschooling society*, Marion Boyars, New York.
- Jaeger, A.J. and Eagan, M.K. (2007) "Exploring the Value of Emotional Intelligence: A Means to Improve Academic Performance", *NASPA Journal*, vol. 44, no. 3, pp. 512-537.
- John, P.D. and Wheeler, S. (2008) *The digital classroom: harnessing technology for the future of learning and teaching*, Routledge, London.
- Johnson, R.B. and Onwuegbuzie, A.J. (2004) "Mixed Methods Research: A Research Paradigm Whose Time Has Come", *Educational Researcher*, vol. 33, no. 7, pp. 14-26.
- Julnes, G. and Mark, M. (1998) "Evaluation as sense making: knowledge construction in a realist world", *New Directions for Evaluation*, vol. 78, no. 1, pp. 33-45.
- Justine Mercer (2007) "The Challenges of Insider Research in Educational Institutions: Wielding a Double-Edged Sword and Resolving Delicate Dilemmas", *Oxford Review of Education*, vol. 33, no. 1, pp. 1-17.
- Kanuka, H. (2005) "An exploration into facilitating higher levels of learning in a text-based Internet learning environment using diverse instructional strategies", *Journal of Computer-Mediated Communication*, vol. 10, no. 3, pp. 0-0.
- Kanuka, H. and Nocente, N. (2003) "Exploring the Effects of Personality Type on Perceived Satisfaction with Web-Based Learning in Continuing Professional Development", *Distance Education*, vol. 24, no. 2, pp. 227-244.
- Kear, K. (2007) "Communication aspects of Virtual Learning Environments: perspectives of early adopters". In Montgomerie, C. and Seale, J. (ed), *Proceeding of World Conference on Educational Multimedia, Hypermedia and Telecommunications*, pp. 1505-1514. Chesapeake, VA: AACE. Available from <http://www.editlib.org/p/25573> [Accessed: 21st May, 2011]
- Keith, N. (2010) "Getting beyond anaemic love: from the pedagogy of cordial relations to a pedagogy for difference", *Journal of Curriculum Studies*, vol. 42, no. 4, pp. 539-572.
- Keys, W. and Fernandes, C. (1993) *What do students think about school?: research into the factors associated with positive and negative attitudes towards school and education : a report for the National Commission on Education*, National Foundation for Educational Research, Slough.

- Kim, Y. and Baylor, A. (2006) "A Social-Cognitive Framework for Pedagogical Agents as Learning Companions", *Educational Technology Research & Development*, vol. 54, no. 6, pp. 569-596.
- Kitzinger, J. (1995) "Qualitative research. Introducing focus groups", *BMJ : British Medical Journal*, vol. 311, no. 7000, pp. 299-302.
- Koshy, V. (2010) *Action research for improving educational practice: a step-by-step guide*, SAGE, Los Angeles, [Calif.].
- Kyriácou, C. (1986) *Effective teaching in schools*, Basil Blackwell, Oxford.
- Labaree, R.V. (2002) "The risk of 'going observationalist': negotiating the hidden dilemmas of being an insider participant observer", *Qualitative Research*, vol. 2, no. 1, pp. 97-122.
- Landau, J. and Meirovich, G. (2011) "Development of students' Emotional Intelligence: participative classroom environments in higher education", *Academy of Educational Leadership Journal*, vol. 15, no. 3, pp. 89.
- Laws, S., Harper, C., and Marcus, R. (2003) *Research for development*, Sage Publication, London.
- Leese, M. (2009) "Out of class—out of mind? The use of a Virtual Learning Environment to encourage student engagement in out of class activities", *British Journal of Educational Technology*, vol. 40, no. 1, pp. 70-77.
- Limniou, M. and Smith, M. (2010) "Teachers' and Students' Perspectives on Teaching and Learning through Virtual Learning Environments", *European Journal of Engineering Education*, vol. 35, no. 6, pp. 645-653.
- Liu, I., Chen, M.C., Sun, Y.S., Wible, D. and Kuo, C. (2010) "Extending the TAM model to explore the factors that affect Intention to Use an Online Learning Community", *Computers & Education*, vol. 54, no. 2, pp. 600-610.
- Maibom, H.L. (2009) "Feeling for Others: Empathy, Sympathy, and Morality<sup>1</sup>", *Inquiry*, vol. 52, no. 5, pp. 483-499.
- Maki, R.H., Maki, W.S. and Whitaker, P. (2000) "Evaluation of a Web-based introductory psychology course: I. Learning and satisfaction in..." *Behavior Research Methods, Instruments, & Computers*, vol. 32, no. 2, pp. 230-239.
- Manos, M.A. (2012) "Emoticon Intelligence or Emotional Intelligence?", *Phi Kappa Phi Forum*, vol. 92, no. 1, pp. 26-26.
- Marchand, G.C. and Gutierrez, A.P. (2012) "The role of emotion in the learning process: Comparisons between online and face-to-face learning settings", *Internet & Higher Education*, vol. 15, no. 3, pp. 150-160.

- Mason, R.B. (2011) "Student Engagement with, and Participation in, an e-Forum", *Journal of Educational Technology & Society*, vol. 14, no. 2, pp. 258-268.
- Matthews, B. and Ross, L. (2010) *Research methods: a practical guide for the social sciences*, Pearson Longman, New York, NY.
- Mayer, J.D. and Cobb, C.D. (2000) "Educational Policy on Emotional Intelligence: Does It Make Sense?", *Educational Psychology Review*, vol. 12, no. 2, pp. 163-183.
- Mayer, J.D. and Salovey, P. (1993) "The intelligence of Emotional Intelligence", *Intelligence*, vol. 17, no. 4, pp. 433-442.
- Mayer, J.D. and Salovey, P. (1997) "What is Emotional Intelligence?" In Salovey, P. and Sluyter, D. J. (ed), *Emotional development and Emotional Intelligence*, Basic Books, New York, pp. 3-31.
- Mazer, J.P., Murphy, R.E. and Simonds, C.J. (2007) "I'll See You On "Facebook": The Effects of Computer-Mediated Teacher Self-Disclosure on Student Motivation, Affective Learning, and Classroom Climate This project was funded in part by a Teaching-Learning Development Grant from the Center..", *Communication Education*, vol. 56, no. 1, pp. 1-17.
- Mazzone, E., Read, J. C. and Beale, R. (2008) "Design with and for disaffected teenagers", Proceedings: *NordiCHI*, pp. 290-298.
- McFarlane, D.A. (2011) "Are There Differences in the Organizational Structure and Pedagogical Approach of Virtual and Brick-and-Mortar Schools", *Journal of Multidisciplinary Research (1947-2900)*, vol. 3, no. 2, pp. 83-98.
- McLaughlin, C. (2008) "Emotional well-being and its relationship to schools and classrooms: a critical reflection", *British Journal of Guidance & Counselling*, vol. 36, no. 4, pp. 353-366.
- McNiff, J., Lomax, P. and Whitehead, J. (2003) *You and your action research project*, Routledge Falmer, New York.
- Medina, J. (2009) *Brain rules: 12 principles for surviving and thriving at work, home, and school*, Pear, Seattle, Wash.
- Mercer, J. (2007) "The challenges of insider research in educational institutions: wielding a double-edged sword and resolving delicate dilemmas", *Oxford Review of Education*, vol. 33, no. 1, pp. 1-17.
- Mertens, D.M. (2007) *Research and Evaluation in Education and Psychology: Integrating Diversity with Quantitative, Qualitative, and Mixed Methods. Second Edition*, SAGE Publications.

- Meyer, D. and Turner, J. (2006) "Re-conceptualizing Emotion and Motivation to Learn in Classroom Contexts", *Educational Psychology Review*, vol. 18, no. 4, pp. 377-390.
- Miles, M.B. and Huberman, A.M. (1994) *Qualitative data analysis: an expanded sourcebook*, Sage, Thousand Oaks.
- Miles, M.B. and Huberman, A.M. (1984) *Qualitative data analysis: a sourcebook of new methods*, Sage, Beverly Hills.
- Miller, D. and Lavin, F. (2007) "'But now I feel I want to give it a try': formative assessment, self-esteem and a sense of competence", *Curriculum Journal*, vol. 18, no. 1, pp. 3-25.
- Mon, L. (2010) "Communication and Education in a Virtual World: Avatar-Mediated Teaching and Learning in Second Life", *International Journal of Virtual and Personal Learning Environments (IJVPLE)*, vol. 1, no. 2, pp. 1-15.
- Monteith, M. (2004) *ICT for curriculum*, Intellect, Bristol.
- Mullins, D., Deiglmayer, A. and Spada, A. (2013) "Shaping Knowledge co-construction" In Baker, M., Andriessen, J. and Je`arvele`a, S. (2013) *Affective learning together: social and emotional dimensions of collaborative learning*, Routledge, Milton Park, Abingdon, Oxon.
- Munn, P., Drever, E. and Scottish Council for Research in Education (1999) *Using questionnaires in small-scale research: a teacher's guide*, Scottish Council for Research in Education, Edinburgh.
- Nandi, D., Hamilton, M. and Harland, J. (2012) "Evaluating the Quality of Interaction in Asynchronous Discussion Forums in Fully Online Courses", *Distance Education*, vol. 33, no. 1, pp. 5-30.
- Nielson, K.A. and Lorber, W. (2009) "Enhanced post-learning memory consolidation is influenced by arousal predisposition and emotion regulation but not by stimulus valence or arousal", *Neurobiology of Learning & Memory*, vol. 92, no. 1, pp. 70-79.
- Nolen, J.L. (2003) "Multiple Intelligences in the Classroom", *Education*, vol. 124, no. 1, pp. 115-119.
- Nwabude, A. A. (2010) "Pilot Study on the Impact of VLE on Mathematical Concepts Acquisition within Secondary Education in England", *World Academy of Science, Engineering & Technology*, no. 45, pp. 1-6.
- Oliver, K., Osborne, J. and Brady, K. (2009) "What are secondary students' expectations for teachers in virtual school environments?" *Distance Education*, vol. 30, no. 1, pp. 23-45.

- Onwuegbuzie, A.J., Dickinson, W. B., Leech, N. L. and Zoran, A. G. (2009) "A qualitative framework for collecting and analyzing data in focus group research", *International Journal of Qualitative Methods*, pp. 1- 20.
- Opie, C. (2004) *Doing Educational Research*, SAGE Publications, London.
- Orlikowski, W.J. and Baroudi, J.J. (1991) "Studying Information Technology in Organizations: Research Approaches and Assumptions", *Information Systems Research*, vol. 2, no. 1, pp. 1-28.
- Pajares, M. F. (1992) "Teachers' Beliefs and Educational Research: Cleaning up a Messy Construct", *Review of Educational Research*, vol. 62, no. 3, pp. 307-332.
- Parker, J.D.A., Creque Sr., R.E., Barnhart, D.L., Harris, J.I., Majeski, S.A., Wood, L.M., Bond, B.J. and Hogan, M.J. (2004) "Academic achievement in high school: does Emotional Intelligence matter?", *Personality & Individual Differences*, vol. 37, no. 7, pp. 1321-1330.
- Patton, M.Q. (2002) *Qualitative research and evaluation methods*, Sage, London.
- Pekrun, R. (2005) *Progress and open problems in educational emotion research*.
- Pekrun, R., Elliot, A.J. and Maier, M.A. (2009) "Achievement Goals and Achievement Emotions: Testing a Model of Their Joint Relations With Academic Performance", *Journal of educational psychology*, vol. 101, no. 1, pp. 115-135.
- Pekrun, R., Frenzel, A.C., Goetz, T. and Perry, R. P., (2007) "The control-value theory of achievement emotions: An integrative approach to emotions in education" In Schutz, P. and Pekrun, R. (ed), *Emotion in Education*, pp. 13-36, Elsevier, Oxford, England.
- Persky, S., Kaphingst, K.A., McCall, C., Lachance, C., Beall, A.C. and Blascovich, J. (2009) "Presence Relates to Distinct Outcomes in Two Virtual Environments Employing Different Learning Modalities", *CyberPsychology & Behavior*, vol. 12, no. 3, pp. 263-268.
- Peterson, M. (2005) "Learning interaction in an avatar-based virtual environment: a preliminary study", *PacCALL Journal*, 1, pp. 29-40.
- Petrides, K.V., Frederickson, N. and Furnham, A. (2003) "The role of trait Emotional Intelligence in academic performance and deviant behavior at school", *Personality & Individual Differences*, vol. 36, no. 2, pp. 277.
- Pratt, N. (2003) "On Martyn Hammersley's Critique of Bassey's Concept of the Fuzzy Generalisation", *Oxford Review of Education*, vol. 29, no. 1, pp. 27-32.
- Pring, R. (2000) *Philosophy of educational research*, Continuum, London.

- Pugh, E. (2008) "Recognising Emotional Intelligence in professional standards for teaching", *Practitioner Research in Higher Education*, vol. 2, no. 1, pp. 3–12.
- Renner, A. (2002) "Teaching Transformed (Book)", *Educational Studies*, vol. 33, no. 4, pp. 494.
- Richburg, M. and Fletcher, T. (2002) "Emotional Intelligence Directing a Child's Emotional Education", *Child Study Journal*, vol. 32, no. 1, pp. 31.
- Robinson, K. (2009) "Encouraging social presence and a sense of community in a virtual residential school", *Open Learning: The Journal of Open and Distance Learning*, vol. 24, no. 2, pp. 127-139.
- Rokeach, M. (1973) *The nature of human values*, Free Press, New York.
- Russell, J., Elton, L., Swinglehurst, D. and Greenhalgh, T. (2006) "Using the online environment in assessment for learning: a case - study of a web - based course in primary care", *Assessment & Evaluation in Higher Education*, vol. 31, no. 4, pp. 465-478.
- Salmon, G. (2002) *E-tivities: the key to active online learning*, Kogan Page, London.
- Salovey, P. and Mayer J. D. (1990) "Emotional Intelligence", *Imagination, Cognition, and Personality*, vol. 9, no. 1, pp. 185-211.
- Sapsford, R.J. and Jupp, V. (1996) *Data collection and analysis*, Sage in association with Open University, London.
- Sapsford, R.J., and Jupp, V. (2006) *Data collection and analysis*, SAGE, London.
- Scaife, J. (2004) "Reliability, Validity and Credibility", In Opie, C., (ed), *Doing Educational Research*. SAGE Publications, London, pp. 58-72.
- Schmuckler, M.A. (2001) "What Is Ecological Validity? A Dimensional Analysis", *Infancy*, vol. 2, no. 4, pp. 419-436.
- Scott, D. and Usher, R. (1999) *Researching education: data, methods and theory in educational enquiry*, Cassell, London.
- Selvaruby, P. S., O'Sullivan, B. and Watts, D. M. (2008) "School-based assessment in Sri Lanka: Ensuring valid processes for assessment-for-learning in physics". In Coll, R. K. and Taylor, N. (ed). *Education in context: An international perspective of the influence of context on science curriculum development, Implementation and the student-experienced curriculum*, Sage, London.

- Selverian, M. M. and Hwang, H. S. (2003) "In Search of Presence: A Systematic Evaluation of Evolving VLEs", *Presence: Teleoperators & Virtual Environments*, vol. 12, no. 5, pp. 512-522.
- Shannin F., H. and Richard E., M. (1997) "The role of interest in learning from scientific text and illustrations: On the distinction..", *Journal of educational psychology*, vol. 89, no. 1, pp. 92.
- Sikes, P. (2004) "Methodology, Procedures and Ethical concerns", in Opie, C. (ed), *Doing Educational Research*. SAGE Publications, London, pp. 15-33.
- Sikes, P.J. and Potts, A. (2008) *Researching education from the inside: investigations from within*, Routledge, London.
- Smith, J.K. and Hodkinson, P. (2002) *Fussing about the Nature of Educational Research: The Neo-Realists versus the Relativists*, Taylor & Francis, Ltd.
- Smyth, A. and Holian, R. (2008) "Credibility issues in research from within organizations", in Sikes, P.J. and Potts, A. (ed), *Researching education from the inside: investigations from within*, pp. 33-48, Routledge, London.
- Stake, R.E. (1995) *The art of case study research*, Sage Publications, Thousand Oaks.
- Stanford, P. (2003) "Multiple Intelligence for Every Classroom", *Intervention in School & Clinic*, vol. 39, no. 2, pp. 80-85.
- Sternberg, R.J. (2004) "Culture and Intelligence", *American Psychologist*, vol. 59, no. 5, pp. 325-338.
- Stiggins, R. (2005) "From Formative Assessment to Assessment FOR Learning: A Path to Success in Standards-Based Schools", *Phi Delta Kappan*, vol. 87, no. 4, pp. 324-328.
- Storrs, D. (2012) "'Keeping it real' with an emotional curriculum", *Teaching in Higher Education*, vol. 17, no. 1, pp. 1-12.
- Swanborn, P. G. (2010) *Case study research*, Sage, London.
- Taber, K. S. (2009) "Building theory from data: Grounded theory", in Wilson, E. (ed), *School-based research: a guide for education students*, pp. 216-229, SAGE, Los Angeles, [Calif.].
- Tarhini, A., Hone, K. and Liu, X. (2013) "User Acceptance Towards Web-based Learning Systems: Investigating the Role of Social, Organizational and Individual Factors in European Higher Education", *Procedia Computer Science*, vol. 17, no. 0, pp. 189-197.
- Tashakkori, A. and Teddlie, C. (1998) *Mixed methodology: combining qualitative and quantitative approaches*, Sage, Thousand Oaks, Calif.



- Taylor, L.D. (2011) "Avatars and Emotional Engagement in Asynchronous Online Communication", *Cyberpsychology, behavior and social networking*, vol. 14, no. 4, pp. 27-212.
- Thorndike, E. L. (1920) "Intelligence and its uses" *Harper's Magazine*, 140, pp. 227-235.
- Thorne, K. (2007) *Essential creativity in the classroom: inspiring kids*, Routledge, London.
- Time, (1977) "What Ever Became of "Geniuses"?", vol. 110, no. 25, pp. 107.
- Titsworth, S., Quinlan, M.M. and Mazer, J.P. (2010) "Emotion in Teaching and Learning: Development and Validation of the Classroom Emotions Scale", *Communication Education*, vol. 59, no. 4, pp. 431-452.
- Trinick, M. (2007) "Navigating the VLE maze", [www] *e-learning magazine*, Available from:  
<http://www.vlesupport.co.uk/images/editorfile/Articles/navigating%20the%20VLE%20maze.pdf> [Assessed 23rd January, 2011]
- Tyack, D. and Tobin, W. (1994) "The "Grammar" of Schooling: Why Has It Been So Hard to Change?", *American Educational Research Journal*, vol. 31, no. 3, pp. 453-479.
- Von Neuforn, D.S. (2007) "Gender Gap in the Perception of Communication in Virtual Learning Environments", *Interactive Learning Environments*, vol. 15, no. 3, pp. 209-215.
- Vygotsky, L.S. (1978) *Mind in society: the development of higher psychological processes*, Harvard University Press, Cambridge, Mass.
- Walliman, N. and Buckler, S. (2008) *Your dissertation in education*, Sage, Los Angeles.
- Wang, C. and Reeves, T. C. (2007) "The meaning of culture in online education: implications for teaching, learning, and design", in Edmundson, A. (ed), *Globalised E-learning Cultural Challenge*, pp. 1-17, Information Science Publishing, London.
- Wang, S.S. (2011) "Could Those Hours Online Be Making Kids Nicer?", *Wall Street Journal - Eastern Edition*, vol. 258, no. 39, pp. 1-D4.
- Waterhouse, L. (2006) "Multiple Intelligences, the Mozart Effect, and Emotional Intelligence: A Critical Review", *Educational Psychologist*, vol. 41, no. 4, pp. 207-225.
- Weiner, B. (1990) History of Motivational Research in Education, *Journal of educational psychology*, vol. 82, no. 4, pp. 616.
- Wellington, J.J. (2000) *Educational research: contemporary issues and practical approaches*, Continuum, London.

- Wellington, J. (2005) "Has ICT come of age? Recurring debates on the role of ICT in education, 1982–2004", *Research in Science & Technological Education*, vol. 23, no. 1, pp. 25-39.
- White, J. (2008) "Illusory Intelligences?", *Journal of Philosophy of Education*, vol. 42, no. 3 - 4, pp. 611-630.
- Wilding, C. (2010) *Change your life with Emotional Intelligence*, Hodder Education, London.
- Wiliam, D. (2011) "What is assessment for learning?", *Studies in Educational Evaluation*, vol. 37, no. 1, pp. 3-14.
- Wilson, E. (2009) *School-based research: a guide for education students*, SAGE, Los Angeles, [Calif.].
- Winzenburg, S. (2012) "In the Facebook Era, Students Tell You Everything", *Chronicle of Higher Education*, vol. 58, no. 42, pp. A26-A26.
- Woods, P. (2002) *Inside schools: ethnography in educational research*, Routledge/Falmer, New York.
- Yin, R.K. (2009) *Case study research: design and methods*, SAGE, London.
- Yin, R.K. (1994) *Case study research: design and methods*, Sage, Thousand Oaks, Calif.
- Yin, R.K. (1989) *Case study research: design and methods*, Sage, London.
- Yin, R.K. (1984) *Case study research: design and methods*, Sage, Beverly Hills.
- Zwozdiak-Myers, P. (2012) *The teacher's reflective practice handbook: becoming an extended professional through capturing evidence-informed practice*, Routledge, Abingdon, Oxon.

## **Appendix 1 – Request for participation**

- **Letter to Head Teacher**
- **Letter to colleagues**
- **Information sheet for students**
- **Approval letter from Brunel University Ethics Committee**

## Letter to Head Teacher



March, 2012

Dear [deleted],

As part of my Doctoral studies at the Brunel University, I am required to undertake a research study for my thesis. I intend to conduct this research study at [deleted] school under the title 'The Emotionally Intelligent VLE: How it may be constructed from the perspective of secondary education'. The research study will be based on a case study strategy and will consider issues such as:

- What are teachers' views about Emotional Intelligence in relation to teaching and learning?
- Which Emotional Intelligence competencies (used in traditional face-to-face classrooms) are transferable into a VLE?
- How can we encourage persistence and motivation amongst our students when they learn within the VLE?

The sample for this study will be drawn from teachers, teaching assistants and software developers. It is my intention to also select 150 students from the student population of our school. The student participants will be selected on the basis of a sample stratified by year group and ethnicity. All participants of the study will be informed of the purpose of the study, why and how they have been selected and their rights to withdraw from it. They will be required to sign a consent form.

I am sure that the findings of the study will help in improving the teaching and learning that takes place within our VLE. I am by this letter therefore seeking your permission in order to go ahead with the proposed study within the context of [deleted] School. Please let me know if you have any reservations about the proposed study. Thank you.

Yours Sincerely,

Felix Donkor

## Letter to colleagues



March, 2012

Dear Colleague,

As part of my studies at the Brunel University, I am required to undertake a research study for my thesis. I have chosen as a title for this thesis, 'The Emotionally Intelligent VLE: How it may be constructed from the perspective of secondary education'. The research study will be based on a case study strategy and will consider issues such as:

- What are teachers' views about Emotional Intelligence in relation to teaching and learning?
- Which Emotional Intelligence competencies (used in traditional face-to-face classrooms) are transferable into a VLE?
- How can we encourage persistence and motivation amongst our students when they learn within the VLE?

The sample for this study will be drawn from teachers, teaching assistants and software developers. It is my intention to also select 150 students from the student population of our school. The student participants will be selected on the basis of a sample stratified by year group and ethnicity.

I am sure that the findings of the study will help in improving the teaching and learning that takes place within our VLE. I am by this letter therefore inviting you to be a participant of the study since you are your department's lead teacher in relation to the adoption and use of the VLE. Please note that:

- All participants' contributions will be treated anonymously and will be analysed together.
- Individual views/opinions will not be discussed with anyone.
- You can withdraw your participation at any time.
- Neither the study nor its findings will be used for performance management purposes.

Please indicate your willingness to participate in this study by signing the consent sheet attached. Thank you.

Yours Sincerely,

Felix Donkor

I have read the letter / information sheet and I am **willing/unwilling** to participate in the proposed study.

NAME .....

SIGNATURE .....

DATE .....

## Information sheet for students

You have been invited to take part in a study that will help to improve the school's VLE (Fronter). Please read the information below carefully and then **sign** to accept this invitation.

### ✦ **Purpose of the study:**

To find out from you how best a VLE may be constructed in order to make it an attractive and inspiring learning environment; one in which you will feel motivated to learn as well as supported. The study is part of Mr Donkor's university work.

### ✦ **Who is involved?**

- 150 students (including you).
- 10 teachers – Mr Donkor is the researcher.
- 5 Teaching Assistants.
- 3 Software developers.

### ✦ **How were you selected?**

- Stratified sample followed by random sampling\*.

### ✦ **What will you be required to do?**

- To give your opinion about which aspects of the VLE encourages (motivates) you to learn within it.
- To comment on how you would like the VLE to be used.
- To trial different tools that will be introduced into the VLE and provide feedback.

### ✦ **How you will provide your comments:**

- You will be required to complete questionnaires anonymously – No names required.
- You will be required to respond to the questionnaires electronically – No handwriting clues.
- Responses will be analysed together. Individual responses will not be discussed with anyone.

### ✦ **How often will you be required to comment:**

- Once each half term for two terms. Please provide honest responses as much as possible. Remember all responses are anonymous.

### ✦ **Can I withdraw my participation?**

We will be thankful for your participation as your contribution and support is important to this study. Findings will be shared at a special assembly where your

participation will be acknowledged. But if you are uncomfortable in any way with participating in this study you are free to withdraw at anytime. **Thank you.**

I have read the information above.

I understand the information above.

I would like to **accept/decline** the invitation to participate in the proposed study.

**Name:** .....**Year** ..... **Date:** .....



## **Approval of ethics application**

Head of School of Sport & Education  
Professor Susan Capel

**Brunel**  
UNIVERSITY  
L O N D O N

Heinz Wolf Building,  
Brunel University, Uxbridge,  
Middlesex, UB8 3PH, UK  
Tel: +44 (0)1895 265104  
Fax: +44 (0)1895 265759  
www.brunel.ac.uk

Mr Felix Donkor  
12 Birling Road  
Erith  
Kent DA8 3JF

6<sup>th</sup> March 2012

Dear Felix

**RE16-11 – The Emotionally Intelligent VLE: How It May Be Constructed from the Perspective of Secondary Education**

I am writing to confirm the Research Ethics Committee of the School of Sport and Education received your application connected to the above mentioned research study. Your application has been independently reviewed to ensure it complies with the University/School Research Ethics requirements and guidelines.

The Chair, acting under delegated authority, is satisfied with the decision reached by the independent reviewers and is pleased to confirm there is no objection on ethical grounds to grant ethics approval to the proposed study.

Any changes to the protocol contained within your application and any unforeseen ethical issues which arise during the conduct of your study must be notified to the Research Ethics Committee.

On behalf of the Research Ethics Committee for the School of Sport and Education, I wish you every success with your study.

Yours sincerely

Dr Gary Armstrong  
**Chair of Research Ethics Committee**  
School Of Sport and Education

## **Appendix 2**

### **Pro forma for teachers to record observation**

- **Form completed by a Textiles teacher**
- **Form completed by a Science teacher**

Using videos in a VLE: Evaluation of impacts on students' emotional intelligence

Subject: <u>TEXTILES</u>	Class: <u>CLOT/VICTOR</u>	Date: <u>1.3.13</u>
--------------------------	---------------------------	---------------------

**Please use this pro forma each time you evaluate the impacts of using videos in the VLE**

1. Type of video used? YouTube  Own Videos  Other (please specify .....)

2. Videos were made available:  
 a) Prior to lesson to give students an idea of what to expect   
 b) After a lesson to emphasise what was supposed to be learnt

3. Please describe briefly, students' attitude towards the use of videos  
POSITIVE

4. On a scale of 1 (excellent) to 5 (poor), please indicate by circling a number, the impact of using the videos on students':

Confidence	1	(2)	3	4	5
Self-esteem	1	(2)	3	4	5
Self-regulation	1	(2)	3	4	5
Willingness to contribute to discussions	1	(2)	3	4	5
Quality of contributions	1	(2)	3	4	5
Interest in others' opinions	1	2	(3)	4	5
Trust of others' opinions	1	2	(3)	4	5
Ability to collaborate with peers	1	(2)	3	4	5
Empathy	1	(2)	3	4	5
Motivation to learn	(1)	2	3	4	5

5. In what ways did the use of videos affect the classroom ambience?  
CALMER (NOT PANICKING!) AS KNEW WHAT TO EXPECT IN THE LESSON & WERE ABLE TO VISUALISE THE PRACTICAL TASK - LESS OF 'I CAN'T DO IT!'

6. a) Do you think students can improve upon the qualities mentioned in Q4 if videos are used more regularly? Yes  No   
 b) Please indicate your reasons:  
GAVE STUDENTS MORE MOTIVATION TOWARDS THE TASK.

7) Please add any other comments below: NOT ALL THE STUDENTS USED THE VIDEO AS A BACK-UP FOR THE WRITTEN TASK THAT FOLLOWED - STILL VARIANCE IN THEIR RESPONSES.

For the interviews it will be helpful if you could identify and talk about a student or group of students whose confidence, self-esteem, motivation or ability to collaborate with others was particularly impacted by the use of videos. Thank you.

\* I interviewed 6 girls - 3 with top marks & 3 with mediocre marks.

Using videos in a VLE: Evaluation of impacts on students' emotional intelligence

Subject: Science	Class: year 7 victor	Date:
------------------	----------------------	-------

**Please use this pro forma each time you evaluate the impacts of using videos in the VLE**

1. Type of video used? YouTube  Own Videos  Other (please specify .....)

2. Videos were made available:  
 a) Prior to lesson to give students an idea of what to expect   
 b) After a lesson to emphasise what was supposed to be learnt

3. Please describe briefly, students' attitude towards the use of videos

I had demonstrated a practical during the lesson and a pupil recorded it. They seemed shy at first however when the demonstration continued and finished with an explosion they were very quick to forget that it was being recorded. After letting them know that it was to go onto frontier where they can look at it again, they were very eager and wanted to show parents also.

4. On a scale of 1 (excellent) to 5 (poor), please indicate by circling a number, the impact of using the videos on students':

Confidence	1	2	3	4	5
Self-esteem	1	2	3	4	5
Self-regulation	1	2	3	4	5
Willingness to contribute to discussions	1	2	3	4	5
Quality of contributions	1	2	3	4	5
Interest in others' opinions	1	2	3	4	5
Trust of others' opinions	1	2	3	4	5
Ability to collaborate with peers	1	2	3	4	5
Empathy	1	2	3	4	5
Motivation to learn	1	2	3	4	5

5. In what ways did the use of videos affect the classroom ambience?

The class was quieter than usual at the start of the demonstration and were softly spoken when answering questions.

6. a) Do you think students can improve upon the qualities mentioned in Q4 if videos are used more regularly? Yes  No

b) Please indicate your reasons:

I think videos recorded during their own lesson in particular would have a huge impact in improving learning as they are much more likely to find it interesting and go back to view it as they would have been involved in the making of the video.

7) Please add any other comments below:

Although this video was not based around a home work or a requirement to view it, it led me to think that I could use videos to set homework which would be a lot more motivating.

For the interviews it will be helpful if you could identify and talk about a student or group of students whose confidence, self-esteem, motivation or ability to collaborate with others was particularly impacted by the use of videos. Thank you.

## **Appendix 3**

- **NVivo coding showing how a logical chain of evidence was derived for the node ‘the response contained evidence of how interviewees used videos in the VLE’ and the impacts on students.**
- **Coded data on issues raised about the use of videos**



## Evidence of using videos

<Internals\interview AC> - § 1 reference coded [2.00% Coverage]

Reference 1 - 2.00% Coverage

Yes, I have tried the videos in Goretti, they have about four videos on their page. They aren't using all of them but I have left them up so that they can use them for **revision**, and they seem to have built up their **confidence**.

<Internals\interview DTM> - § 9 references coded [37.02% Coverage]

Reference 1 - 3.40% Coverage

So, one, I took the video of ourselves in the class and then put it up after the lesson and that encouraged them to use, I felt, the VLE. Because it was more about them as they were more involved in the videos.

Reference 2 - 1.86% Coverage

After I put it on Fronter, they were actually coming back with – Miss, I saw the video. So, it did encourage them.

Reference 3 - 8.83% Coverage

I put up a funny video which involved safety in the lab. It was actually a rap video with a lower ability group. I put it up on the homework diary on the homepage. And as soon as they walked in, I had it projected on the interactive white board. You could tell who actually went on to it because they started discussing it... and they found it quite funny. Some of them you really could tell ... because I put keywords up for homework as well. So in that way I could monitor who actually did go on to the homework diary to check their homework.

Reference 4 - 4.41% Coverage

So those were the two ways that I used it. I found the first way, having the video in the classroom a little bit more effective in the fact that because they knew I was going to put it up, they did intentionally go and show their parents the videos and things like that.

Reference 5 - 7.50% Coverage

They were a lot more **confident** because they watched the video prior to the lesson and because it was engaging, quite humorous, they didn't actually realise that they were actually learning whilst they were watching it, so they were using the same words in the videos. I did find that quite encouraging. With the other video I found that they were ... because the video had questions and they were able to revisit those questions after, that was quite good in a way.



Reference 6 - 1.84% Coverage

with the video that I put up before the lesson they really worked well together because they wanted to discuss it.

Reference 7 - 2.32% Coverage

It would have encouraged the communication because it would have been better showing them videos rather than them having to read it off a book.

Reference 8 - 5.16% Coverage

I think their **confidence** builds up. I don't think always working out of textbooks can be that effective. If we are using the videos... even if there is a video during the lesson, so that having the opportunity maybe if they weren't listening to go back and **revisit** the video, I think that will build up their **confidence**.

Reference 9 - 1.69% Coverage

I think the use of videos would also help with the quality of lessons if it was [not any video] engaging

<Internals\KC> - § 1 reference coded [0.77% Coverage]

Reference 1 - 0.77% Coverage

So you definitely get that feeling of **confidence** in the classroom from the students.

<Internals\ML interview> - § 18 references coded [30.38% Coverage]

Reference 1 - 2.95% Coverage

Another way is I can use videos to demonstrate certain activities, certain tasks that can be **played back**, can be put on the school's VLE and can be accessed outside of school hours to **reinforce the learning**, to reinforce that visual way of learning.

Reference 2 - 2.87% Coverage

I have used videos resources as I said for demonstrating practical tasks as a means... to **access it before lessons** to enable pupils to hopefully have **confidence**, know what was going to come up in the next lessons, be aware of the next learning.

Reference 3 - 1.01% Coverage

I have also used the homework diary which allows me to put more detail on the homework

Reference 4 - 0.52% Coverage

I think they encourage more self-awareness,

Reference 5 - 0.76% Coverage

I am not sure about self-regulation but definitely self-awareness

Reference 6 - 2.18% Coverage

Why am I saying self-awareness? (2secs) I think because it gave them the confidence and then if they thought they were not going to be able to do it then they look at it again and again.

Reference 7 - 1.17% Coverage

So they were...I suppose if you were looking at it in that way, they were regulating themselves then

Reference 8 - 1.57% Coverage

Yes! Yes I think so because of the confidence level and not springing it on them as a new task or a new activity that they had to do.

Reference 9 - 2.26% Coverage

They had more confidence so therefore the atmosphere and the sort of ethos in the room [was positive] they've all had access to it [the video] so they were more willing to support each other.

Reference 10 - 0.68% Coverage

Yes I think so. Yes I would say there was more trust. Yes.

Reference 11 - 4.35% Coverage

There was the video as part of their homework prior to the lesson that it applied to, we then watched the video again in the lesson, I then actually demonstrated it so they were getting the real thing and then they had to go away and do it, and then they had to describe, explain, put into words with diagrams as well how to do that activity and that was their homework.

Reference 12 - 0.54% Coverage

They all thought the use of videos was useful.

Reference 13 - 1.24% Coverage

I couldn't differentiate by saying yes she got a better mark because of the video. I don't think I could.

Reference 14 - 0.84% Coverage

And it would create their independence; they can then go and access this

Reference 15 - 2.09% Coverage

It would definitely make them more independent. So like I said at the start it is the maturity, it is that less reliance on me as the teacher. That is how I see this, for sure.

Reference 16 - 0.75% Coverage

Q: Which in effect can lead self-confidence?

R: Absolutely!

Reference 17 - 2.01% Coverage

If they go in and access these videos, they haven't got me looking over them. They can practice it however many times they like. They can make that decision themselves.

Reference 18 - 2.57% Coverage

so that is how I can see VLEs fitting in and DEFINATELY as I said you know, working on this, making those decisions, autonomy, independent learning, pacing themselves- they are all different [that is self-regulation].

<Internals\NJ INTERVIEW> - § 10 references coded [16.90% Coverage]

Reference 1 - 0.90% Coverage

Then I started to discover that I could link them [the homework] to videos and I could put mp3s in. So they [homework] started to become interesting

Reference 2 - 0.88% Coverage

So generally homework is so much more musical through the use of MP3s and also I am now getting them to watch the videos that go with the music.

Reference 3 - 1.29% Coverage

As long as that listening task was related to what they have done in lessons and I am going to get them to have this individual experience at home and then we discuss it, definitely, everybody has something to say.

Reference 4 - 1.58% Coverage

Q: Does it encourage their self-esteem in any way or confidence?

R: yeah! I think because they have had the chance to make their own opinion and they are so excited about it. And I made them feel that everyone's opinion was worthwhile. I think it does yeah!

Reference 5 - 2.59% Coverage

I think it does affect that. I think also because I am trying to get more and more SMSC in because they know that their opinion is valid and I do really think because they get to share their opinions with the whole class after they have had the chance to form them. They are not being put on the spot, they have actually had the chance to go away and think about it so they are prepared, I think it does get them more confident.

Reference 6 - 0.83% Coverage

I made a video of myself playing what I needed them to play on the keyboard and it was REVOLUTIONARY. For the progress made by the kids ...

Reference 7 - 2.33% Coverage

With me actually videoing my own hands and giving them instructions, totally totally, literally revolutionised the way that they were working. Because they weren't sat there trying to kind of work out where 'C' is again and looking at a picture of the notes, they were literally seeing my fingers and they knew ... and I had it playing as well in the lesson. So that is really good!

Reference 8 - 1.36% Coverage

Q: Do you think that affects their motivation to learn the subject?

R: Yes! As long as you break it down properly, they see that it is doable. I do think so [using impacts on students' motivation] yeah, I think it is great.

Reference 9 - 1.83% Coverage

Q: And the impact on their achievement if any?

R: They achieved a lot more than the previous year when I introduced these videos because it just broke down a hurdle because they were able to see where their fingers should go on a keyboard rather than be told and kind of have to work it out you know.

Reference 10 - 3.31% Coverage

And also I like the fact that I can make the 'rooms' bright and colourful...full of pictures and they see themselves a bit more which helps to keep them connected...because I have brought a bit of me and my classroom into Fronter and I didn't use to kind of get that but these days I am like I want a picture here a picture there, an image here and a smiley there just so that... I kind of like a bit of my personality to be on there so it's just a kind of homework task separate from me. They know that what we did in lessons is still connected.

<Internals\RB Interview> - § 11 references coded [37.13% Coverage]

Reference 1 - 1.66% Coverage

In terms of helping to develop EI I think the VLE can play a very big role in helping pupils to sort of their chance to do things independently.

Reference 2 - 5.66% Coverage

With my subject history, quite often when you've seen upsetting things in a classroom context, there is that sense of other people in the room, what do peers think, whereas especially in terms of putting things on Fronter they can access at home, there is the same as we will be looking for in the classroom, there is a chance to engage with it independently and come to own conclusions about things rather than worrying about other people's opinions or what other people think about it.

Reference 3 - 10.28% Coverage

I have used it mainly with my year 10s with this in mind really, how it could affect their Emotional Intelligence that sort of thing and looking at an aspect of history where there was actually a lot of hardships and a lot of deaths but there were a lot of positives that can be found when it comes to an exam answer because it's about knowledge – positive as well as all the terrible things that happened. With this, I used a couple of videos that showed them either all of it or part of it in a lesson so that they get a chance for their consideration and discussion in lessons on the topic. Then the homework could be to **re-watch** it and make notes on the bit that we haven't watched already basically. I found it useful, and it helped them to certainly understand what was going on, sort of what they have to get out of it from within the lesson but also things they could do themselves.

Reference 4 - 3.43% Coverage

In a couple of instances, one of them that we did lead on to quite a big piece of homework that was done in a couple of weeks time and I could tell from that they could empathise and that seems to me to be the main emotion that they sort of got from it from doing it in that way and looking at it.

Reference 5 - 1.38% Coverage

Given time to reflect on it and watch it at home, they seem to have more understanding of what things used to be like.

Reference 6 - 2.44% Coverage

I do think it helped in terms of raising awareness and in a way it helped to raise the confidence of the pupils because sometimes when we've had videos watched in a lesson and then talked about it the next week

Reference 7 - 0.51% Coverage

Some pupils remember very well what happened

Reference 8 - 1.97% Coverage

Having that opportunity to watch it at home to go over things and some reinforced information meant that, I would like to say that everyone was on a more levelled footing.

Reference 9 - 1.92% Coverage

From the work they produced yeah, it would suggest and their engagement in the topic. Partly yeah, that is a sign of their confidence and their understanding of it.

Reference 10 - 4.95% Coverage

In a way... I think I noticed it more I suppose... it could be that they normally are more laid back. I noticed it more with a couple of pupils that I considered to be a little bit more weaker were more ... (06. 00) in what they knew and calling out the answers and some of them were difficult concepts as well that some of them were remembering, because they had gone over it again rather than having think back a week to the work.

Reference 11 - 2.92% Coverage

Q: How do you think it impacts on the relationships in the classroom? Do they trust each other's responses a bit more or not?

R: I think there was probably an aspect of that because they knew the other people had seen it so they knew they had a point

## Issues relating to the use of videos

<Internals\interview DTM> - § 4 references coded [11.55% Coverage]

Reference 1 - 2.55% Coverage

With the use of the video within the classroom, they were a little bit less collaborative in the sense that they wanted to be in the spotlight – in the video,

Reference 2 - 0.81% Coverage

because they wanted to be in the video themselves

Reference 3 - 4.13% Coverage

It might kind of work in [a disadvantage way] the fact that they think ‘I don’t need to listen I will just look at the video later on’...but with the sensible students, I think definitely it would help them with their confidence and with revision activities.

Reference 4 - 4.07% Coverage

I have found that with long videos the students tend to drift off a little bit so may be a short video that has maybe end of unit and it can summarise everything. That would be quite good because I found out that not all videos can aid their learning.

<Internals\RB Interview> - § 1 reference coded [1.43% Coverage]

Reference 1 - 1.43% Coverage

On reflection with me, I should have monitored more, where the pupils have watched or where the pupils have put some things.



## **Appendix 4**

- **An example of the responses obtained from the staff questionnaire**
- **Summary of IFS questionnaire responses**
- **Examples of interview transcripts**
- **Examples of use of feedback – 2 stars and a wish**

## **Example of staff questionnaire response**

(February, 2013)

### **1. Please outline briefly how you think VLE forums can be depended upon to encourage positive relationships amongst students:**

---

Pupils get a chance to read each other's viewpoint and learn from each other. Pupils may be able to relate to or interact with other people's responses who they may not socially mix with in a normal classroom setting.

### **2. Please outline briefly any experiences you have had in relation to using forums, videos or tests which affected your students' Emotional Intelligence:**

---

Videos before class have helped save on class time as pupils come in with some prior knowledge. Often I show longer, more in-depth films than would be possible in class which focus not just on the facts but human side of an issue so pupils can explore/think about life in other peoples' shoes. This develops their own sense of being and a sense of empathy for others.

### **3. Do you think the use of forums can impact upon students' self-esteem and confidence? Please say how:**

---

Pupils can see how their work/input compares to others. For some, this will help them feel that they are 'normal' or that their work is above the average so boosting their confidence. For lower ability children, reading other's comments can help them form their own opinions/responses and this will help them feel more confident in making their contributions.

### **4. How do you think the use of videos in the VLE impacts on classroom ambience?**

---

It really does help with engaging pupils with a topic. They help pupils in that they give everyone a starting point.

### **5. In what ways do you think the use of videos, forums and tests impact upon students' ability to show empathy?**

---

Often I show longer, more in-depth films than would be possible in class which focus not just on the facts but human side of an issue so pupils can explore/think about life in other peoples' shoes. This develops their own sense of being and a sense of empathy for others.

### **6. How do you think students' willingness to support each other is affected by the use of VLE tools such as tests, videos, and forums:**

---

I don't think I have enough evidence to say either way on this aspect.

**7. How do you think the use of tests in the VLE impacts on students' motivation to learn?**

---

Due to the quick feedback given I think these can have a very important impact on motivation.

**8. How do you think teachers' feedback impact on students' emotions?**

---

This is incredibly important. Pupils want to know that their efforts are valued so feedback must be useful and sensitive.

**9. In what ways do you think the VLE can be used to support Emotional Intelligence in the classroom?**

---

It can lead to greater independence for pupils and more collaboration if used properly. Pupils can give feedback to others and this can be taught in a way so that feedback is sensitive and constructive. This develops a sense of self and others.

**10. Please choose the option which best describes your opinion about the following statements:**

	<b>Strongly agree (1)</b>	<b>Agree (2)</b>	<b>Disagree (3)</b>	<b>Strongly disagree (4)</b>
Using videos in the VLE helps to boost students' confidence	X			
Using videos in the VLE helps students to be self-aware	X			
Using videos in the VLE helps students to self-regulate their learning	X			
Using videos in the VLE helps students to self-regulate their emotions		X		
Students behave better when they are confident	X			
Low self-esteem can disrupt classroom ambience	X			
Access to videos can encourage students to support each other		X		
The use of videos can lead to effective communication in the classroom	X			
Forums encourage reflection		X		
Forums enable students to support each other		X		
Forums help students to develop better relationships		X		
Classroom discussions can be enhanced by online forums		X		
Positive feedback promotes self esteem	X			
Positive feedback promotes openness		X		
Forums, videos, tests and feedback can encourage resilience	X			
Forums, videos, tests and feedback can help students to form better relationships.		X		
<i>Other (please specify):</i>				

**Summary of IFS questionnaire responses**  
(March, 2012)

**1. Please tick the option that best describes your opinion.**

	Strongly agree	Agree	Disagree	Strongly disagree	Rating Average	Rating Count
<b>1.1 A teacher must be confident about his/her own strengths in relation to emotions within the classroom.</b>	<b>67.5% (27)</b>	30.0% (12)	2.5% (1)	0.0% (0)	1.35	40
<b>1.2 It is important for a teacher to be able to control his/her emotions within the classroom.</b>	<b>72.5% (29)</b>	27.5% (11)	0.0% (0)	0.0% (0)	1.28	40
<b>1.3 Teachers must always be in control of everything that happens in their lessons.</b>	20.0% (8)	<b>45.0% (18)</b>	32.5% (13)	2.5% (1)	2.18	40
<b>1.4 Teachers need to be aware of the emotional state of their students in every lesson.</b>	15.0% (6)	<b>70.0% (28)</b>	15.0% (6)	0.0% (0)	2.00	40
<b>1.5 Being able to recognise the impact of our emotions on those around us is important in teaching.</b>	42.5% (17)	<b>57.5% (23)</b>	0.0% (0)	0.0% (0)	1.58	40
<b>1.6 Teachers must be able to recognise how their own emotions may affect their students.</b>	<b>60.0% (24)</b>	40.0% (16)	0.0% (0)	0.0% (0)	1.40	40
<b>1.7 It is important for teachers to know the impact their students' emotions may have on them (as teachers).</b>	25.0% (10)	<b>67.5% (27)</b>	7.5% (3)	0.0% (0)	1.83	40

	Strongly agree	Agree	Disagree	Strongly disagree	Rating Average	Rating Count
<b>2.1 Teachers must attempt to understand the emotional needs of their students.</b>	32.4% (12)	<b>59.5% (22)</b>	8.1% (3)	0.0% (0)	1.76	37
<b>2.2 It is important for teachers to understand the academic needs of their students.</b>	<b>73.0% (27)</b>	27.0% (10)	0.0% (0)	0.0% (0)	1.27	37
<b>2.3 Students' emotional needs should form a major part of a teacher's planning.</b>	5.4% (2)	<b>54.1% (20)</b>	40.5% (15)	0.0% (0)	2.35	37
<b>2.4 Students are well motivated when the teacher is attuned to their emotional needs.</b>	29.7% (11)	<b>54.1% (20)</b>	16.2% (6)	0.0% (0)	1.86	37
<b>2.5 Students are well motivated when the teacher is attuned to their academic needs.</b>	<b>51.4% (19)</b>	43.2% (16)	5.4% (2)	0.0% (0)	1.54	37
<b>2.6 Good teachers can tell from students' faces and body language when they need help with their work.</b>	29.7% (11)	<b>48.6% (18)</b>	21.6% (8)	0.0% (0)	1.92	37
<b>2.5 Teachers need to be aware of what emotional needs their students require in order to progress.</b>	8.1% (3)	<b>59.5% (22)</b>	32.4% (12)	0.0% (0)	2.24	37
<b>2.6 Being able to perceive the emotional needs of students during lessons is an important aspect of teaching and learning.</b>	18.9% (7)	<b>73.0% (27)</b>	8.1% (3)	0.0% (0)	1.89	37
<b>2.8 It is usually difficult to identify with students' emotional needs.</b>	13.5% (5)	<b>43.2% (16)</b>	<b>43.2% (16)</b>	0.0% (0)	2.30	37

**3. Please tick the option that best describes your opinion:**

	<b>Strongly agree</b>	<b>Agree</b>	<b>Disagree</b>	<b>Strongly disagree</b>	<b>Rating Average</b>	<b>Rating Count</b>
<b>3.1 It is important for students to have confidence in their teachers' abilities.</b>	<b>78.4%</b> (29)	21.6% (8)	0.0% (0)	0.0% (0)	1.22	37
<b>3.2 It is important for students to have a good relationship with each other.</b>	45.9% (17)	<b>51.4%</b> (19)	2.7% (1)	0.0% (0)	1.57	37
<b>3.3 Teachers must encourage their students to be supportive of each other.</b>	<b>67.6%</b> (25)	29.7% (11)	2.7% (1)	0.0% (0)	1.35	37
<b>3.4 Students behave well in emotionally balanced classroom environments.</b>	32.4% (12)	<b>67.6%</b> (25)	0.0% (0)	0.0% (0)	1.68	37
<b>3.5 Students achieve well if they believe that their teacher has a genuine interest in their welfare.</b>	<b>56.8%</b> (21)	40.5% (15)	2.7% (1)	0.0% (0)	1.46	37



**4. Please tick the option that best describes your opinion:**

	<b>Strongly agree</b>	<b>Agree</b>	<b>Disagree</b>	<b>Strongly disagree</b>	<b>Rating Average</b>	<b>Rating Count</b>
<b>4.1 It is important to manage emotions within the classroom environment</b>	31.4% (11)	<b>68.6% (24)</b>	0.0% (0)	0.0% (0)	1.69	35
<b>4.2 Managing emotions within the classroom is difficult.</b>	20.0% (7)	<b>60.0% (21)</b>	20.0% (7)	0.0% (0)	2.00	35
<b>4.3 Emotional Intelligence strategies can be deployed to manage students' participation in activities.</b>	8.6% (3)	<b>82.9% (29)</b>	8.6% (3)	0.0% (0)	2.00	35
<b>4.4 To be successful, students must be able to communicate their emotional needs effectively.</b>	5.9% (2)	<b>58.8% (20)</b>	32.4% (11)	2.9% (1)	2.32	34
<b>4.5 Students are usually conscious of their behaviour in the classroom</b>	5.7% (2)	<b>65.7% (23)</b>	28.6% (10)	0.0% (0)	2.23	35
<b>4.6 Being emotionally alert can help teachers to bring out the best in students.</b>	20.6% (7)	<b>79.4% (27)</b>	0.0% (0)	0.0% (0)	1.79	34
<b>4.7 Students work well within an emotionally stable environment.</b>	34.3% (12)	<b>65.7% (23)</b>	0.0% (0)	0.0% (0)	1.66	35
<b>4.8 Teachers must be able to deal with their students' emotions.</b>	20.0% (7)	<b>74.3% (26)</b>	5.7% (2)	0.0% (0)	1.86	35
<b>4.9 Teachers must be able to inspire and influence their students</b>	<b>65.7% (23)</b>	34.3% (12)	0.0% (0)	0.0% (0)	1.34	35

positively.						
<b>4.10 Forming positive relationships with students help in attaining positive learning outcomes.</b>	<b>57.1% (20)</b>	42.9% (15)	0.0% (0)	0.0% (0)	1.43	35
<b>4.11 Students should be encouraged to take responsibility for their learning.</b>	<b>85.7% (30)</b>	14.3% (5)	0.0% (0)	0.0% (0)	1.14	35
<b>4.12 Students must be encouraged to foster good relationships with their peers.</b>	<b>58.8% (20)</b>	41.2% (14)	0.0% (0)	0.0% (0)	1.41	34
<b>4.13 Students excel when teachers are warm, approachable, fair and supportive.</b>	<b>51.4% (18)</b>	45.7% (16)	2.9% (1)	0.0% (0)	1.51	35
<b>4.14 Teachers must form constructive relationships with their students.</b>	<b>57.1% (20)</b>	42.9% (15)	0.0% (0)	0.0% (0)	1.43	35
<b>4.15 To be successful, a teacher must be able to maintain a calm and respectful classroom environment.</b>	<b>71.4% (25)</b>	25.7% (9)	2.9% (1)	0.0% (0)	1.31	35
<b>4.16 Teachers and students must open up to each other on issues relating to teaching and learning.</b>	25.7% (9)	<b>65.7% (23)</b>	8.6% (3)	0.0% (0)	1.83	35
<b>4.17 Teachers and students must open up to each other on issues relating to the emotional aspects of teaching and learning.</b>	14.3% (5)	<b>65.7% (23)</b>	17.1% (6)	2.9% (1)	2.09	35

**5. Please indicate in a few words what the term Emotional Intelligence means to you.**

Not really sure but I imagine that this has to do with feelings and the state of a person's wellbeing and the impact that this has on the classroom and performance.

27/3/2012 7:46

being able to understand and manage one's own emotions or the emotions of people around you

26/3/2012 20:22

The pupils' well-being is important in the learning process. Pupils who feel good about themselves will learn better than pupils who have emotional problems (e.g. divorce, bullying, low self-esteem etc.)

26/3/2012 17:57

Being aware of people's thoughts and feelings and being able to take into account how these are likely to affect behaviour. This includes your own thoughts and feelings.

26/3/2012 16:43

Understanding your emotions and the emotions of others.

26/3/2012 16:36

The ability to be aware of and analyse your own feelings, as well as those of others.

19/3/2012 9:00

Taking all aspects of a person into account e.g. what type of mood they are in - happy, bored, angry and then try to adapt teaching style to get them involved in learning.

17/3/2012 23:10

Being able to successfully manage your emotions in different situations.

17/3/2012 9:56

Being aware of own and others emotions and how to handle them.

16/3/2012 16:35 It is a person's ability to recognise their emotional state, the emotional state of others, and how these states impact on interactions.

## 6. In what ways do you think Emotional Intelligence impacts on teaching and learning?

One needs to be aware of not just the student's academic ability but also of other factors that may hinder their performance in class

27/3/2012 7:46

In the classroom the teacher has the ability to develop a positive learning environment promoting happiness, self-esteem, develop confidence among their pupils

26/3/2012 20:22

Emotional wellbeing enhances learning.

26/3/2012 17:57

It can be used to create an environment in which students feel secure enough to make good progress and want to learn.

26/3/2012 16:43

Can affect the mood in lessons which can impact on the learning if the lesson material is not adapted accordingly (e.g. if pupils are upset it may affect their approach to certain activities)

26/3/2012 16:36

Teachers and learners need to develop a good relationship which will enable them to work together to achieve the same goal. When there is no understanding of emotions of each other there is a conflict and it will have a negative impact on both sides.

21/3/2012 10:23

Understanding the students' needs when their emotions differ.

20/3/2012 20:18

Engenders empathy, comfort and trust so that everyone is able to learn in a positive environment and do their best.

19/3/2012 16:59

We need to be able to deal with events in our lives that make us unhappy or angry so that these emotions do not cloud our judgement or ability to take part in teaching and learning.

19/3/2012 10:32

**7. Please describe briefly any ways in which you think Emotional Intelligence can be adopted in Virtual Learning Environments.**

Given a VLE a student can access materials at any time so if there are factors hindering performance in class the student can work when they are ready to do so.

27/3/2012 7:46

Pupils in lower classes can use the Smiley face logo to tick after they have completed the work. They could write a sentence to inform the teacher how they felt about the work. They could identify problems that they encountered during the work set. There should be time made for verbal dialogue for teachers to discuss the work with individual pupils.

26/3/2012 17:57

Maybe with emoticons? Through teachers written responses to students work.

26/3/2012 16:43

Don't understand the question.

26/3/2012 16:36

Positive quotes to inspire and motivate the children to think more deeply about themselves and where they are heading in life.

22/3/2012 12:27

Maybe by developing a good relationship between students and teachers. Students can see that the teacher really care about them when they communicate through virtual learning.

21/3/2012 10:23

Smiley faces ??

20/3/2012 20:18

Not sure I feel able to answer this but will have a think !

19/3/2012 16:59

Use of emoticons may help. Use of positive images and films with familiar faces.

19/3/2012 10:32

This is difficult! One could have a speaker giving directions for activities to groups of students - activities/role-play which help to develop Emotional Intelligence. Speakers/tutors would provide different scenarios. Access to reading literature. VLE could be used to provide links to other students around the world, as a way of mentoring. VLE is a powerful tool to reach those in areas where access to learning material is impossible.

19/3/2012 10:27

Perhaps in responding to a forum.

19/3/2012 9:00

## **Examples of interview transcripts**

## Interview with VLE Content Developer

**Q: Can you please provide a brief background to your experiences with respect to the development and/or use of VLE tools?**

R: I got involved when VLE was first introduced in Lewisham. Together with a Champion we received personalised training. An external consultancy helped us produce modules for the new 21 Century Science course. I trained on Fronter administration.

- The maths lead created an ambitious programme with lessons Yrs 7-11 delivered by VLE.
  - The basic pages were modified for different class groups.
  - Some were “bread and butter” pages; others more exciting
- The science course also covered three complete modules based on interlinked pages for Yr10-11 learners
- Both examples used page templates containing text, images, links and embedded resources.
- I undertook research and experimentation on the tools as some are much more user-friendly than others.
- I also did some research and testing of additional plug-ins.

**Q: How long have you been involved with the development of content for use in VLEs?**

R: About 5 years in community secondary schools

**Q: What factors do you consider as most important when developing content for use by secondary school children?**

R:

- VLE as a teaching and learning tool – not ICT.
- Pupil-facing VLE is intuitive, interactive, accessible and exciting.
- The content is meaningful, extends classroom learning and adds new dimensions to T&L.
- VLE in “web style”, age appropriate, interactive and differentiated: catering to different learning styles and abilities.
- Teacher facing VLE has accessible shared content; tools used to inspire learning; and makes the best use of time with blended and rapid e-learning options.

**Q: In what ways do you think VLEs should be used in order to promote interaction?**

R: Key interactions are:

- pupil/screen/mouse
- pupil/pupil collaboration
- pupil collaboration in groups
- pupil/teacher interactions
- teacher/teacher interactions

There is a vast amount for each of these. Please let me know what you are most interested in.

**Q: It has been said that emotionally stimulating instructional materials can improve motivation for learning. How do you think this can be achieved?**

R: I am not completely sure what you mean by “emotionally stimulating” but I would say the context in which learning is presented has some importance. Copying and pasting reams of text is not stimulating. The popular technique of using VLE as a launch pad for existing PowerPoints doesn’t work for me.

- At first glance VLE tools offer teachers innovative ways to present materials, but I think with the limitations of Fronter they might easily go stale.
- There are lots of discussion forums on the internet where new ideas can be picked up.
- Because teachers are so pressed for time, I find there is often insufficient attention to detail in presenting content. A poorly planned/presented (one which is difficult for learners to use) is as off-putting as a poorly presented web page or a poorly planned lesson.

Q: In what ways do you think we can use VLEs to encourage motivation for learning and/or resilience amongst students?

R:

- A VLE can easily deliver visual and aural stimulation. I found this a big barrier in the school environment because the audio facility is lost in computer suites. One cost-effective solution would be for pupils to have personal headphones to plug in to shared computers.
- Tracking pupil activity is a useful tool as you can guide students to Fronter if you can see they aren’t using it. Maintaining the conversation on what they like and don’t like is helpful, but peer pressure and good materials will attract pupils better than exhortation.
- I feel that digital presentation of material can be really useful for helping the resilience of teachers! Students who learn quickly can move on, whereas there can be more resources available in digital format to support the learning of those who are struggling.
- Pupils will be unaware how much work goes into preparing VLE resources. The “teach-yourself” appearance of e-learning could be motivational as there is no one to see when you are struggling and auto- and personalised feedback can encourage students to soldier on and reinforce success. This is done privately without any embarrassment before peers.
- The VLE allows pupils to present their work in new, creative ways as it allows files of any type to be uploaded. The blending of digital and traditional media could be motivational allowing pupils to submit work in a new range of formats.

Q: Can you outline some strategies that can be used to maximise participation in VLE forums and discussions?

R:

I was warned in my initial training not to rely on discussion and forums because they are difficult.

- Forums are a great tool when there is geographic distance and participants have no contact other than online. There is generally total anonymity as participants do not know each other. In schools, all participants meet face to face on a daily basis so forums must



have a clear value-add. Online discussion may be an unattractive option in schools as learners might be more comfortable sharing with friends rather than all participants.

- Forums need active teacher participation and monitoring. Students must feel their comments are read and responses are promptly given to stimulate further discussion. Students may post their own responses to a question, but rarely respond to others.
- There are tools for teachers and pupils can track all their active discussions, but these have to be set up; otherwise it's hard to know if anything is happening in a discussion forum.
- Forums with a short time window probably work better than open-ended forums provided they self-evidently add something to learning.
- Forums are useful if there is more required than sharing views. For example, they can be used to share websites and digital work (videos/audios/images)
- Forum is one way of running online revision sessions when pupils are no longer coming to school – the day to day meeting does not take place. It's attractive for teachers who want to make a final push with results.

**Q:** How can the test and hand-in tools be used more effectively in order to boost students' confidence, self-esteem and ability to interact with others?

**R:**

#### **Hand-in tool**

- The hand-in is great if teachers don't want to carry about large amounts of paper/text books. It is also very great for instantly seeing who has not completed an assignment.
- Hand-in tool is more useful if there is an online response to boost confidence. Unfortunately online marking in Fronter is very clumsy and time-consuming. In most schools I have worked in, the systems require duplication of work - giving scores and comment on Fronter also have to be duplicated elsewhere.
- Hand-in tool is great if the work is in non-Word format. For example, audio, video, images, interactive PowerPoint (or static PowerPoint containing many sheets)
- Hand in tool is not designed for pupil interactions. If collaborative work is to be handed in, it's likely other tools will be needed first.

#### **Test tool**

- The test tool is great for multiple choice and self-marking and auto-feedback.
- The test tool is good for collating pupil text answers but I was wary of using the automatic marking. Being automatic the tool will not recognise typos so it will mark a pupil's answer wrong when a teacher might mark it correct (or correct a spelling error). This would be very de-motivational. Pupils may even 'un-learn' a correct answer!
- It's very difficult and time consuming to give the test tool "eye appeal".
- In itself the test tool does not lend itself to student interaction with each other, the interaction is with screen/mouse. I guess a test may be completed in small groups or as a classroom activity where they collectively decide on the response. My own experience of pub quizzes tells me it is very positive reinforcement and makes me feel smart when I suggested the correct answer and my colleagues chose the wrong one.

Q: Please outline from your point of view, any challenges relating to the adoption and use of VLEs?

R:

There are a whole host of challenges facing the adoption of VLE in secondary schools. Other institutions will have different issues:

- School systems frequently duplicate what can be done on VLE and as they are frequently compulsory potential functionality of VLE is lost. It is unreasonable to expect teachers to duplicate work.
- In some schools there is an overlap between website, e-mails and VLE
- School management tend to look for quick wins. Setting up a VLE is an exhaustive process. Strategic decisions have to be made on an informed view rather than on a wish list. In order to deliver x, a b and c have to happen first. An example I have in mind was a prima facie simple request to set up homework diaries for all pupils:
  - There are multiple solutions – I needed to experiment to see which is right for the school
  - I was advised that the paper homework diary is also used for behaviour management. Was this part of the spec or not?
  - Unless all teachers subscribe to the VLE homework diary on VLE you can end up two competing homework diaries. Who deals with objections?
  - What is the mechanism for training all teachers to how to use the Fronter solution?
  - Can you rely on pupils showing their parents how to access a VLE homework diary?
  - Who is responsible for the changeover, enforcement and quality of work done by teachers?
  - Was the primary intent improved accessibility and impact for parents and pupils or was it something we could try out on Fronter to differentiate our school?
- Secondary schools have a complex curriculum offer and a wide range of pupil ability. Community schools serving around 800+ young people and tend to be chaotic places. The larger the school, the more this is true. In my opinion this is likely to result in a chaotic VLE whereas a very ordered structure is needed.
- Looked at from a pupil view, VLE can become an unwieldy monster. On the other hand, while there may be a huge amount of teacher activity, from an individual pupil's point of view there may be very little to see or do because their teacher in any given subject is not using it.
- Champions are great for experimental purposes, but it's not clear to me how this rolls out into a coherent, holistic VLE meeting the needs of all learners. A school organogram is very complex. I believe this is the reason why it has proven so much easier to roll out VLE in primary schools and at tertiary level.
- VLE is sold as "each teacher fends for him/herself". Even if ground rules are agreed, it's difficult for hard-pressed teachers to stick to them. I feel the primary development focus should be on resources for everyone. This favours the rapid e-learning approach over blended e-learning.
- There is so much material available as add-ins to support learning, but I found no comprehensive plan.
- Teacher buy-in is hard to achieve.

- Many of the tools are clunky and it's so easy to use for document retrieval even though this is not a VLE at all.
- Sharing resources is difficult. Copying from room to room is fine provided access rights are correctly set but it is still a tedious task if it has to be repeated five times over; central storage rooms again need to be set up correctly.
- There are short cuts but you have to know the software really well to use them.
- It's easier to skim through sheets of paper than skim through digital content
- To function successfully, there is a massive increase in teacher workload with uncertain benefits

Here's my instinctive priority list for a controlled roll out (to be supplemented milestones and tracking):

- What is the school's vision for a VLE? Is it feasible within budget and time allowed?
- What infrastructure needs to be set up? How is it to be used?
- What hardware and software is available – does it meet the need
- To create a stake in the project for all teachers and pupils I would look for common content across the curriculum and layer in differentiation once the medium is embedded in school life.
- Stakeholders can find their way around and engage with VLE
- Continually build and refresh content for standardisation and interactivity
- Measure impact on T&L – assess value for money/effort

Q: How do you think VLEs can be used in order to support the emotional aspects of learning?

R:

I haven't worked with a school that has got this far. I would need a more detailed scenario to think this through.

**Q: Please add anything else you would like to share:**

R:

The main issue I have with Fronter is that it is not really e-learning; it's a content management system (CMS). E-learning can easily be added-in with authoring tools. Whether teachers would have the time, energy or inclination to do so is another question.

Here's a link to an example of e-learning I came across:

[http://elearning.citizensadvice.org.uk/IA/pi\\_level1\\_v5/P1/default.htm](http://elearning.citizensadvice.org.uk/IA/pi_level1_v5/P1/default.htm)

If you first follow the "standard" route you will see examples where the situation is considered from the point of view of various individuals. (Is empathising with different experiences what you mean by emotional stimulation?) Information comes in tidy, bite-sized packets. Please note the large range of learner/mouse interactions that are available.

In contrast, if you follow the “accessible” route, you will see the same learning presented in the style associated with the Page tool. Fronter can only replicated this version, but I find it pedestrian in comparison.

## Interview with teacher

**Q: Thank you for agreeing to do this interview.**

R: No problem.

**Q: Would you please tell me first of all, what emotional intelligence means to you.**

R: I think emotional intelligence is the ability to see what is the best course for relating to someone else (2 secs). An ability and an awareness about somebody's emotional state so that for instance, in the case of a teacher if you want to say to a child, 'actually you've not asked that question correctly', you are using your emotional intelligence to think how confident that child is, How easily do they take correction? What will be my approach here? How can I make them feel comfortable with criticism and how can I best use my physical presence, my voice, my facial expression, to enhance how I tell the child about what they need to do? It's knowing, how I am, how I come across, how I seem to people, how I inspire or the opposite, put people off by how I act, and also the ability to read what is going on with somebody else.

**Q: With new technologies becoming more and more widespread in schools, how do you think some of these things that you have talked about can be adapted into VLEs for example?**

R: I think you lose things like the facial expressions, the tone of voice... this kind of use of emotional intelligence... but we still retain the affirmative, the confidence inspiring gestures that we give to one another on a daily, hourly and minute by minute basis. So a VLE can be an excellent tool for using your emotional intelligence IF we programme the VLE to do so. Like for instance, built into forums and built into feedback of work is the ability for the teacher to say 'this is great', I like this, now perhaps do that. Similarly, children can feedback to each other in an affirmative way and a positive way and so we've still got that feedback loop that we have in the presence of each other actually. It is just different but it is there.

**Q: I would like to draw from your experiences as well. Are you able to tell me some of the VLE tools that you have experimented with and how you think they helped in developing your students' emotional intelligence?**

R: I, I actually was really drawn towards such facilities because I started to do tests and quizzes on Fronter and found that those didn't interest me or pay me back in terms of the time needed to do them nearly as much as things like forums. And a forum was really good for helping pupils and myself explore an area where it was quite new for us. So for instance, when I had a year 9 class (2 secs) doing a project on Classic literature and they were doing independent reading, they chose their books independently, I used a forum so that they could feedback to each other on how they were doing and discuss what was difficult about Classic literature and what was rewarding about it and at the same time it was like an SOS. So if a child got stuck on what to choose or if a child lost confidence because they found they didn't really relate to the classic text they thought they should like, I was available to suggest another choice and reassure them that it wasn't down to any weakness on their part. And that was a REALLY good forum.

**Q: Did you notice any impact on students' ability to relate with others when they came BACK to the class as a result of using the forum?**

R: YES! Because the level of discussion was so much more sophisticated...because issues had already come up on the forum so people when they talked about Dickens' Great expectations which many of them had read, they were saying things like as such and such people said on the forum. It was surprisingly easy as long as you ignore the very difficult words; you didn't have to get bogged down with difficult vocabulary. And so it made the level of discussion already very good and also the pupils really appreciated each other's suggestions and people bothering to get back to them when they said things like they were stuck or could something be recommended (2 secs)?. They really enjoyed being helped [by another pupil].

**Q: Being helped... what about the other way? Did you notice that as well? Being helped is fine but what about giving help? Did you think that they were keen to offer help as a result of ...**

R: I think it is REALLY similar to when in class. You ask a question, someone has their hands up... I have something to say, It is the same. I think the pleasure of having something to say is immense and (2 secs) pupils really enjoyed feeding back to each other and even if there was one answer already given, somebody would feedback something because they felt that they had something a little extra to say or a little different.

**Q: Someone said to me, actually two people mentioned to me in their interviews that within the forums they noticed that most of the students were not contributing. That, very few students contributed. Was that your experience?**

R: The best forum I have had so far was the Classic literature forum. And I think what I learnt from that was to... in ICT and in the classroom ... is to have the forum in front of them and talk about the contributions of pupils and say 'well I think that is interesting what you said' I hope my answer was OK for you? And once I did that and I then took them up to ICT, I found most of them contributed because they enjoyed getting a response back. And there were two conclusions to be drawn from that, and I think one of them is that it doesn't feel quite real and you don't quite feel that it will be read and read quickly unless they see that you do that. Sometimes the seeing is believing and the other thing we learned is that I think it's quite new [VLE use] and not every child actually uses the VLE. There is a few just like in the early days of computing some children didn't have laptops and we felt that we were excluding them. It is interesting because now we have widespread technology, we have homework clubs, we have access to computers and still some children aren't big Fronter users and I am not sure why that is but I think the uptake was really good when we were in the computer suites saying 'everyone been on Fronter to contribute? Do go on now if you would like to ... and then they did. Somehow that independent spirit of using this space hasn't happened for some children. And that we maybe need to look into.

**Q: What about the use of video resources? People have talked about its potential, have you experimented with it? And if so, what did you find out about its potential to support EI – self-awareness, empathy, trust etc?**

R: I have not experimented nearly enough as much as I wanted. And I think ...(3 secs) one thing that happened to us was a technological glitch from me where I was uploading (2 secs) YouTube links quite regularly and I would have video of the week and so on and then I found that I couldn't do it. Somehow the (2 secs) practical intelligence and pathway of doing it, I somehow LOST and I don't know why and then I got behind. And the other thing I didn't quite do was achieve using smoothly the technology of recording myself doing parts of lessons and uploading them, and I want to do that next year.

**Q: What do you see as the potential of that [using videos] in supporting emotional intelligence [of students].**

R: I think it is going to be enormous because... I mean we've always got to think about safe guarding but in the future we could be videoing ourselves responding so that we are responding with our faces and voices as well as just our words. We could be doing that kind of interaction for a forum, I don't know, but I think it is a strange thing where in a classroom

you say ‘watch me, I am about to demonstrate something’ yes, children will be listening. But children seem to listen just as keenly if you say ‘watch a video of me’ and it is a strange thing but they do, and we should take advantage of that.

**Q: And [2 sec]... well, you haven’t experimented enough with the aspect where you actually record yourself but you did mention that you trialled the YouTube videos. How do you think that impacted upon the students’ motivation for learning, attitude towards learning, confidence and things like that?**

R: I think it was very good for learning in that whilst everything is available for pupils on YouTube, they are not always very good at selection and so you are showing them what is available. Also, sometimes you are going sideways into an issue, story or novel. So for instance, if we are doing the novel Mr Pip, if I post somebody talking about the war, the Civil war in Papua New Guinea, that is something that I could find probably easier than a lot of pupils and teachers can always find the appropriate ones. And they [students] know as well that if they watched my video, it is a teacher endorsed video. That, it is actually a good revision resource. It is not something that they just found which maybe good or maybe not be. And often, they are really good at finding these resources but they feel confident when they are looking at resources that I have endorsed.

**Q: You mentioned earlier on that you had trialled the quizzes on Fronter. I am interested in finding out how the quizzes helped the students motivation, enthusiasm for learning ... in what ways do you think the quizzes helped the students?**

R: I think the quizzes are a nice clean way of them knowing what they can do and it sounds ridiculous but I think the process, the pleasure of clicking the choices [3 secs] they really like. And it is something that is different to how you constantly do these things in class. I always have group quizzes and this was more of a private quiz and they liked that. And, as an experiment, I actually put a quiz up and I didn’t tell them I had put it up. I let them find it and I looked at who will find it and do the quiz just to let me know something about the class that I didn’t know very much. That was my Year 9 class when I first had them, and I found that three pupils found the quiz, did the quiz within days of it being on there, and that told me a lot about what they were doing because it was unprompted.

**Q: Generally, how do you think the quizzes impact on students in relation to emotional intelligence?**



R: I am not sure. I am not sure and I think for the amount of time they take, apart from the fact that they are fun and they test knowledge, I am not sure how useful they are. If I had a lot of time in the world I would have lots of quizzes on there but...because of the time factor I have found for emotional intelligence I am far more convinced about the forum.

**Q: Right! Is there anything else you would like to tell me?**

R: Yeah, I would like to say that if Fronter could have a way of alerting me that a student contributed to a forum ... that will be really good. Maybe it does but it is a little bit low key because I found that I haven't answered students for some days and then I have been looking it around the Fronter site and thought...and then noticed suddenly that a child contributed some days ago. And that's been disappointing. So I would like to be a bit quicker in responding ... a quick responsive button, so I think it would be good if there is a way I could see with no problem, what they have done.

**Q: There is actually a way. If you clicked on the top left hand side of the screen you would find there a button called 'my today'. If you clicked on that it should show you all the forums that you are part of and what is the latest contribution so you can add or take away.**

R: Oh OK. I will do that one. It seems like that really, you getting up to speed and doing things like that.

**Q: Finally, I would like to give you the opportunity to tell me of your experiences, what has challenged you, what has encouraged you and what have been the biggest hindrances in relation to using the VLE.**

R: The biggest hindrance is time because everyone finds some part of using the VLE difficult or troublesome but we know with technology it's about time because things that you used to find difficult you suddenly do with no problems at all. Like the thought of putting something on a home work diary is completely hassle-free. Now when we first did that we were distraught that you had to click certain buttons that weren't particularly logical and that if you didn't click certain buttons you find your homework wasn't there. Now, that.. it just doesn't happen to any of us now. We can all use I think, the homework diary and we do! So eventually, I am confident we will be able to use everything including things like what I lost thread on recently which was where children post their work and we put the feedback on their work then we save it to get it back to them. That, for the minute is beyond me because I have

just been too tired [2 secs] since I have had time on my hands to go back to it. But eventually that will just be routine.

And I have loved Fronter... I think it has so many uses and it's... at the very least a beautiful filing system that has an amazing availability of everything. Like, if I am in the computer suite with a class and somebody says 'well, I don't know about such and such [because I missed a lesson], I can direct them to Fronter where I have put so many resources. If they are saying I don't remember which essay we are doing or where to start, there is always something on Fronter and also things like children being careless with things like worksheets, I am not printing you another one because it's on Fronter. You do this for yourself; you do the research for yourself. I have loved this! I think the limits are that you need time to be very very [sic] good at using it and like we just talked about, picking up children's contributions to a forum, if I would have just had the time to see you, ask you, to know that there was a quick way of getting that, that would have saved me the pain of saying that I am late. But you know, all in good time ... and then we will get better [laughs]

**Q: Thank you very much Ms your contribution is very much appreciated.**

R: No problems.


Q: Thank you!

## Example of use of feedback (2 stars and a wish)

### Hand-in - Comment

Name:

Add comments in the hand-in:

 Gregory and augustine.docx

Upload comment

Comment:

\* You have given well developed arguments both for and against the statement  
\* You have clearly demonstrated knowledge of the impact Gregory and Augustine had on the success of Christianity in Britain  
WISH: You need to try to structure you argument into 3 paragraphs -Agree, Disagree and Conclusion. You also need to try to explain the impact of some of the actions more fully i.e. why did the fact that lots of people were baptised make Christianity successful?

Grade:

5A


Evaluation:

Approved  In progress  Not approved  Not delivered  Not evaluated

### Hand-in - Comment

Name:

Add comments in the hand-in:

 Without Gregory Christianity would never have become successful in Britain.docx

Upload comment

Comment:

\* You have given well developed arguments both for and against the statement  
\* You have clearly demonstrated knowledge of the impact Gregory and Augustine had on the success of Christianity in Britain  
WISH: You need to give a new point in your conclusion rather than returning to points you had made earlier.  
LITERACY: You must proof read your work carefully, there are some sentences which are not correct. Please use 'would have' instead of 'would've' in formal writing. Also, avoid starting your sentences with 'Another thing' You cannot get a level 6 unless you demonstrate a good use of English within your answer.

Grade:

5A

Evaluation:

Approved  In progress  Not approved  Not delivered  Not evaluated

## **Appendix 5**

**An example of the responses obtained from the student questionnaire**

**An example of students' focus group report**

# Section 1

- **Question 1. How often have you used Fronter this year?**

- Everyday
- At least once a week
- At least once a month
- At least once a term
- Never

- **Question 2. Which tools have you had opportunities to use within Fronter?**

**Please tick all that apply**

- Homework Diary
- Voting
- Hand-in
- Forums
- Tests
- My messages
- Videos

- **Question 3. Please tick which subjects you have used Fronter in:**

**Tick all that apply**

- Art
- DT
- Drama
- English

- FT
- Geography
- Health and Social
- ICT
- Languages (French/ Spanish)
- Maths
- Music
- PE
- RE
- Science
- History
- Career Planning

- **Question 4. Please state what else you have had the opportunity to do in Fronter:**

**Eg: I have been able to find revision materials for Maths, FT and Science on Fronter.**

**Student's Reply:**

- **Question 5. In my opinion Fronter is:**

- Very easy to use
- Sometimes easy to use
- Very frustrating to use

- **Question 6. I like Fronter because....**

**Please state a response 🏆**

**Student's Reply:**

its fun

- **Question 7. I don't like Fronter because ....**

Please state a response 🗨️

**Student's Reply:**

- **Question 8. I think Fronter can be better if ....**

**Student's Reply:**

- **Question 9. Overall I think using Fronter can help me to improve upon my levels of achievement:**

- Strongly agree
- Agree
- Not sure
- Strongly disagree
- Disagree

## Section 2

- **Question 1. Topic-related videos posted on Fronter :**

(Tick all that apply)

- Helps to build my confidence about a topic
- Enables me to value others' opinions
- Encourages me to contribute to class discussions
- Convinces me that I know everything about a topic
- Encourages me not to listen in class
- Helps me to support others
- None of the above

- **Question 2. The forums on Fronter**

(Tick all that apply)

- Makes me feel valued
- Makes me think about what I want to write

- Enables me to get support
- Enables me to discuss work with my peers
- Helps me to understand other's opinions
- Enables me to support others
- None of the above

- **Question 3. Feedback given by my peers:**

(Tick all that apply)

- Helps to boost my self-esteem
- Encourages me to share my opinions
- Makes me want to help a bit more
- Encourages me to listen carefully to other's opinions
- Encourages me to work harder
- None of these



## **Example of focus group report**

### Student Focus Group 1

#### **Q: How does watching a topic-related video before/after lessons affect your emotions in the classroom?**

The videos help because they give step by step instructions and we are able to learn more from them. Videos help us to revise and help us with homework. We like it because you can replay it as many times as you like. So they help us to become more confident on the topics we are learning in class. It's like having the teacher at home with you that is why it is so helpful. The videos help visual learners. If there is something the student doesn't understand in the video, when they come to school they can ask their teacher for help. So it's like you are always learning and getting better.

Teachers should make it clear to us where the videos are located. The videos are not always functioning. That can be so annoying. If only half of the class watch, don't watch it again in class (unfair to those who saw it)

Maia thinks sometimes the videos don't explain things in much detail!

#### **Q: How does topic-related videos provided before/after lessons affect the quality of classroom discussions?**

We agree that they make class work clearer so more people can contribute.

#### **Q: How do you feel about the responses offered by your peers in the Forums?**

It helps that you can talk to your friends when you are stuck with your homework. Everyone is really nice so you can always ask for help when you don't understand something. The two stars and a wish thing is nice too. It makes you to feel good about yourself and still helps you to know your mistakes. Some people write general comments which are not helpful. Personal meaningful feedback is more acknowledged.

Stop people from misusing the forum. I.e. talk about the work and not other things. That is what direct messages are for. Delete us from year 7 forums so we don't see their notifications.

Slow responses unhandy. Teachers should reply quicker. Limit the posts on the forum.

**Q: Does the forum help you to become empathetic towards others:**

We think so (all of us). Sometimes we are able to help people in the class who don't even sit next to us. People can go out of their way to help you and that makes me want to help other people too. It helps us to get along with each other because we are helping each other. Forums would enhance social activities between students.

**Q: Describe ways in which the VLE may be used to foster good relationships:**

If people can see who is online, send pictures and videos of homework, have more links to homework games then more students will use it and then we can engage more with others.

Frontier should be colourful.

Open discussions between peers and teachers.


Subject/topic specific forums for revision

## **Appendix 6**

### **Screen-shots of students' discussions in VLE library**

## Screenshots of students' discussions in virtual library

Goodreads? 2011-05-26 38


 Goodreads?

I think it would be great if there was a system like they have [here](#) except much more local.

There could be a thread where we can post our opinion on, say, the book of the month and rate it; explaining what we loved/liked /hated about it and whether we'd recommend it.

Read by: 38


+ School Virtual Library 2011-09-15 52

 School Virtual Library

I think that we should have books for everyones taste, like: scary books, adventure books, amusing books and so on.

Read by: 52

Virtual Library 2011-09-16 61

 Virtual Library

**I totally agree with Samara! We all have different tastes so if there is a section of books about a certain subject or a scary selection or maybe just information books ect.**

**What do you think? 😊**

Read by: 61

+ My Say about books. 2011-11-22 14



### My Say about books.

I think that these books should be for different age groups. All these books on here now, are very old. Ancient even! It should be updated. Who else agrees? 😬

Read by: 14

+ I agree with you 2011-11-23 11



### I agree with you

😬 the books are soooooo ANCIENT I Jacqueline Wilson books that my friends read in YEAR 1 I LOVE reading books while thier still new, not one that was new 500 years ago.

thats why we

want new books 😎

Read by: 11

I soooooooooooooo agree with you!! 2011-11-23 17

- I definitely agree with Yen: it would be nice t... 2011-04-20 61



### I definitely agree with Yen: it would be nice t...

I definitely agree with Yen: it would be nice to know what new books are on offer before we get to school.

Read by: 61

yeah, that way we wouldn't have to spend all ou... 2011-05-04 70



### yeah, that way we wouldn't have to spend all ou...

yeah, that way we wouldn't have to spend all our time looking instead of reading in library lessons.

Read by: 70



## Appendix 7

### Staff opinions about VLE appearance

(Evaluation April, 2011)

#### 6. Is the school's VLE user friendly?

The question has been given 29 times

Alternative	Number	Percentage	
Yes	25	86.2%	
No	4	13.8%	

#### 7. Please state reasons for your answer to the last question:

- Easy to use
- The layout is easy to navigate
- Being able to upload documents relating to lessons.
- Many staff use Fronter regularly and find it useful
- Easy to use
- Easy to use and we have had lots of excellent training and support
- there are boxes all over the place and it never feels like I am in the right place
- Lots of information
- Clear and logical lay out.
- Whenever I have needed to access Fronter, it has been easy to use.
- All pupils/teachers have access; however I feel that some staff/pupils make better use of it for teaching and learning than others. So as a school as a whole I think we can further improve on our usage of fronter.
- If I can use it, anyone can!
- Similar methods for things
- In ways it is as you can find your way around most things but in ways it isn't - it seems to take a long time to do things due to difficulty in navigating around the site.
- Easy marking, easy access to resources for students
- A lot of the students are familiar with it and have requested revision materials to be placed on fronter.
- It's easy to use
- Easy to access
- There are obviously some improvements that can be made for every piece of software available but on the whole it is a great idea & learning environment
- The training sessions and 1to1 support with Felix were invaluable.

- Easy link between pupils and staff
- It is quite complicated to constantly create text boxes and sometimes takes a while for it to allow you to edit them. It is also confusing knowing where to store things so that students can access them.
- Not straight forward
- Simple to use
- Good layout
- I think majority of our students are familiar with Fronter
- I think for the pupils it is pretty easy for most of them to use. Obviously practice makes perfect.
- The new layout is much more user-friendly
- It seems fairly clear