



# Exploring Pedagogic Shift in a Virtual International School

Sarah-Louise Jones

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# EXPLORING PEDAGOGIC SHIFT IN A VIRTUAL INTERNATIONAL SCHOOL

by

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A thesis submitted to the University of Bedfordshire in partial fulfilment of the  
requirements for the degree of Doctor of Philosophy

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## ABSTRACT

In a shrinking more connected world, web based communication technologies play an increasingly important role in educating younger generations. However, the process of change that teachers must go through to accommodate the appropriate use of web based communication technologies for teaching and learning is a complex process, which can be viewed from multiple perspectives. Specifically, this study explores pedagogic shift in the context of a virtual international school spanning five different countries within the European Union. It adopts an interpretive paradigm of research to explore perceptions of teachers in the virtual international school over the course of four years from 2009-2013. Using a constructivist grounded theory approach, a variety of data collection techniques were employed over the course of three different cycles of research. Each cycle built on the previous cycle through an in depth analysis of the data, which enabled the emergence of a model for pedagogic shift.

Findings from this research point to the importance of understanding change as a learning journey, which necessarily takes time and is influenced by a variety of factors in which effective leadership plays a central role. Additionally, the research shows how through processes such as understanding each others' different perspectives and the way technologies are harnessed, change is facilitated and a sense of community is built, all play an important role in enabling pedagogic shift to take place.

From these findings a thematic model emerged, which was explored in depth and further refined during the research. The study concludes with recommendations for further research into pedagogic shift, particularly in relation to the dispersed multi-level model of leadership, the evolution of virtual international schools, the changing nature of teacher-student relationships, and the influence of external drivers in models of pedagogic shift.

## DECLARATION

I declare that this thesis is my own unaided work. It is being submitted for the degree of Doctor of Philosophy at the University of Bedfordshire.

It has not been submitted before for any degree or examination in any other University.

Name of candidate: Sarah-Louise Jones

Signature:

A handwritten signature in black ink that reads "Sarah Jones". The signature is written in a cursive style with a small flourish at the end.

Date: 8<sup>th</sup> May 2015



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## **Chapter 1 - Introduction**

### **1.1 Introduction**

This research explores the concept, with the aim of defining, pedagogic shift in the context of virtual international schools. The concept of pedagogic shift has previously been suggested by Simon (1985), in his discussion on structural change in early 20<sup>th</sup> century schools. Building on this work Lawn (1995) discussed pedagogic shift in relation to an historical investigation into curriculum change. Neither study has clearly defined pedagogic shift. Outside of these two studies, pedagogic shift does not appear to have been explored. Set in the context of an emerging educational philosophy, a full definition is presented explaining how the term pedagogic shift is used in this thesis. This is followed by a definition of virtual international schools. The middle sections of this chapter detail the context of this study, which is set within an European Union (EU) funded project called EuroLink - virtual international school which aimed to explore new pedagogical models. Finally, this chapter provides a summary of the research design and a personal statement from the researcher, before outlining the organisation of the thesis.

### **1.2 The Context of the Study**

In order to understand the context of pedagogic shift in this study, a broader description of an emerging educational philosophy is now presented. Educational philosophies vary in different countries, (see section 1.2.1). This variance impacts upon what education might look like in a global online context such as a virtual international school.

### 1.2.1 Shifting Educational Paradigms

Frankena *et al.*, (2002) suggest the need for educational philosophy to underpin education systems. However, politicians do not necessarily draw upon educational philosophy, drawing instead upon ideology to define their visions of educative purpose. Educational philosophies, ideologies and policies vary across countries and sometimes within countries and this may impact on the way different countries deliver and support education to and for learners.

There are different schools of thought regarding the purpose of education (see section 3.2.3). Some suggest it is primarily to drive economies in an ever competitive world. Small *et al.*, (2009) suggest that young people need to be adaptable for a constantly changing work environment where they will be required to follow a variety of careers during their professional life, working with new technologies and solving problems that have not yet emerged. The modern world is changing. Small *et al.*, (2009) argue that global economies require people with skills relevant to this shifting environment and the resulting changing job market. In 1978, the US Department of Labour statistics suggested that by the age of 38, US citizens would have changed career around three times and have had between seven and eight jobs. This figure had grown by 2010 to between 10 - 14 different jobs (Fisch *et al.*, 2010). Wales (2011) argues that the changes in formal education required to meet the challenges associated with a single person having a variety of careers has not yet happened.

Others (Oakeshott, 1989; Facer, 2013) have suggested the purpose of education should be to inculcate individuals into a society of shared histories, learning through transaction with elders to come to some understanding as to what it means to be who we are. Others again (Rogers, 1983) believe that the purpose of education is for self-improvement where individuals take full responsibility of their learning.

Whichever viewpoint one takes, we can expect 'change' to be a central part of our educative futures. Indeed, it is widely agreed (Prensky, 2001; Seely Brown, 2002; Oblinger, 2005; Freison, 2009; Jones *et al.*, 2009) that with the emergence of new technologies, we have arrived at a renaissance in the way learners learn resulting in the need for a rethink regarding educational purpose and practice. This rethinking has already begun and can be seen in the way some scholars are trying to develop new theories and practices concerned with education (e.g. 'Ergonagy' - Tanaka *et al.*, 1994; 'Heutogy' - Hase *et al.*, 2000; 'Ubuntogy' - Bangura, 2005; 'Technogy' - Idrus *et al.*, 2006). As a result of these shifting educational paradigms, some government policies and educationalists are suggesting that the education sector should be moving to a time where learning is more personalized, inquiry based, lifelong, co-constructed and the learner is placed at the center of the learning experience, taking ownership for it (Miliband, 2004; Leadbetter, 2004; Kellet, 2005). Some authors (Wetzel, 2010) have focused on the way a new model of teaching is emerging, as a result of the integration of eLearning. However, most of these models look at post school environments and of those discussions associated with school based teachers, discourse focuses on the adoption of technologies into teaching practices, rather than how this is transforming teachers' overall pedagogical approaches or practices.

### **1.2.2 Defining Pedagogic Shift**

If currently there is a renaissance in the way learners learn as a result of emerging new web based communication technologies, then teachers need to develop, adapt or change teaching practices or put another way, to make a pedagogic shift so they might enable those learners to make sense of the new opportunities for learning. For example, Freison (2009) suggests the need to develop teachers who work in teams to facilitate a disposition of inquiry, not only in themselves, but in their students also. Pedagogic shift can be seen as a change from one set of teaching practices to a new set of teaching practices. This change may be transformational in nature (see section 3.4). In the context of this research, pedagogic shift is defined as a process where teachers work together to change their current isolated teaching practices to

teaching in collaboration with others. They achieve this through the integration of web based communication technologies into those new teaching practices. Teaching practices can be viewed as those strategies (the tasks) and learning designs (the logistics) that enable teachers to practice their craft of teaching. Implicit to this definition is the idea that teachers engage collaboratively in pedagogic shift to improve their teaching practices as individuals and as a group for the benefit of their students. The research for this thesis has shown that central to the definition of pedagogic shift is the concept of a 'learning journey', which is based in a social constructivist paradigm (see section 3.3).

### **1.2.3 Defining Virtual International Schools**

In this thesis, pedagogic shift is discussed in the context of a changing educational landscape, (see section 3.2.1). Specifically, there has been a rapid increase in the number of virtual schools, some of which are international (see section 3.5.1). The concept of virtual schools has largely grown out of the USA (Russell, 2004). In the main, they tend to be traditional face-to-face schools, bounded by national curricula and administrative processes, but also have an online environment where teachers and learners work together without face-to-face contact. Virtual international schools are those where teachers and learners are distributed across national boundaries. The rapid increase in virtual international schools has led to a multitude of definitions (see section 3.5.1). For the purpose of this thesis, a virtual international school is defined as one that spans national boundaries, is made up of geographically distributed partner schools, which are otherwise unconnected, containing teachers and students from those distributed partner schools who take part in collaborative online and face-to-face teaching, learning and assessments. The virtual international school used for the context of this study consists of seven schools that are traditional co-located schools, but who have come together in part, to work in a collaborative online environment to do joint curricula projects.

### 1.3 The European Context

This research is located in a pan European context. Although individual governments in member countries are responsible for their own education systems, the European Union (EU) has developed a strategy, which encourages schools in different EU countries to work together, sharing best practice and learning from each other. In particular the EU highlights a key challenge for our futures:

“Global competition for skills, technological advances, the impact of the Internet and new media on employment, learning and private lives, the growing diversity of our societies – all are forces which are reshaping our education systems and changing the content of and approaches to teaching and learning.”

(European Commission, 2012:3)

The last section of this quote alludes to shifting pedagogies in education systems across Europe. Through the EU, education ministers from member states have identified three key priorities in school education. These are:

- To increase the focus on ensuring that all pupils gain the competences they need in the rapidly changing knowledge society
- To implement the commitment to provide high-quality learning for every student
- To improve support for teachers, school leaders and teacher educators, through more effective recruitment and selection and better-quality professional education

(European Commission, 2013)

The last of these is somewhat ambiguous, although does highlight the need for teacher professional development. Indeed many of the EU and individual member state government documents (e.g. EU, 2000; Kelly, 2005; Education and Culture DG, 2007; EU, 2012) discuss the need for and in some cases articulate how teacher professional development will be supported. However



there is little documentation on how pedagogic shift can be enabled. The EU educational landscape is now discussed in the following sub sections.

### **1.3.1 The EU Education Landscape Across the Participating EU Countries**

As this research is situated in a European context, this section presents a view of education in the EU, considering cultures and identities before specifically identifying some similarities and differences in the EU education systems of schools participating in this research.

According to Osborn *et al.*, (2003), across Western Europe, most education systems since the industrial age, have been based on the same two principles, to equip a new generation with the necessary knowledge and skills to take part in our economic worlds and secondly, to assimilate individuals into society as responsible citizens (see section 3.2). As the 20th Century progressed, however, a third role of education emerged, that which supports personal development. In conjunction with this, Fullan (2000) suggests that the last 40 or so years has seen Western governments ushering in large-scale national curriculum reforms. By the end of the 1970s the establishment of an effective schools movement had emerged and by the late 1980s evidence associated with what worked and what did not when introducing an innovation into an educational context was beginning to emerge. According to Griffin (2001), some education systems in Europe are now moving away from education policies solely associated with teaching, learning and education, to education policies, which are integrated into larger social and economic policies.

In an EU memorandum on lifelong learning (2000), learning was articulated in three different ways, these being formal learning, that which takes place in educational establishments and may or may not lead to some form or recognition; non formal learning, that which is associated with learning in clubs or through sporting endeavours for example, and informal learning, where learning may even be a subconscious process in everyday life.

In spite of these similarities across Western Europe, the way in which individual nations have made educational provision has varied. This has important consequences for this research, which is carried out in five different EU countries. Osborn *et al.*, (2003) suggest a number of dimensions where divergence in practice can be noted, these include:

- choice of educational priorities
- the structure of educational provision
- the degree of central control
- the scale of public resources invested
- the training and status of teachers
- examinations systems

(2003:7)

Comparative studies on education systems across Europe in the main, tend to focus on inputs (e.g. resources) and outputs (e.g. assessment markers), rather than probing the intrinsic values, beliefs, aspirations and perspectives that make up cultural identities within different education systems in European countries. This demonstrates that in spite of the shift in policy making and an apparent aim to promote education for individual learning as well as economic gain of the country, policy makers are increasingly concerned with how well their charges assimilate into productive workers in their national economies compared to those in other countries.

However, the interrogation of intrinsic values, beliefs, aspirations and perspectives is important in transformative change (see section 3.4.3) and is therefore relevant to this research on pedagogical shift. Identifying similarities and differences in these intrinsic values, beliefs, aspirations and perspectives between the countries that have schools taking part in this research, will help to build knowledge in comparative education studies from an alternative perspective to the current dominant discourse.

### **1.3.2 Education Cultures and Identities Across the EU**

The notions of both culture and identity can be problematic as there is no universally accepted definitions exist of either (Fearon, 1999; Spencer-Oakey,

2012). However, as this study is concerned with people from a wide variety of traditions, countries and histories, it is necessary to explore both culture and identity at an introductory level to help explore how they affect pedagogic shift in a virtual international school context. Stenhouse describes culture from a constructivist, socio-cultural viewpoint, as

“... a complex of shared understandings which serve as a medium through which individual human minds interact in communication with one another. It enables us to recognise the familiar way other people think and feel and thus to share their feelings. It also enable us to predict and thus to anticipate the actions of others so that we can cooperate with them.”

(1967:16)

Whilst this had relevance in the 1960s UK, today it is an oversimplification of the notion of ‘culture’, which can now be viewed as more complex and difficult to define. In considering a raft of different definitions Spencer-Oatey, (2012) suggests that culture is multi-layered with all parts interrelated, affecting both behaviour and the way we interpret behaviour. Being separate from both human nature and personality, it is associated with social groups and is tangentially constructed through the self and the society in which one is located. There are similarities here with the notion of social construction (see section 3.3). She argues, “culture is always both socially and psychologically distributed in a group, and so the delineation of a culture’s features will always be fuzzy” (2012:9). Moreover, culture has both universal and distinctive elements, which are learned and subject to gradual change.

Identity is also full of complexities and is multifaceted. However, according to Fearon (1999) in spite of a variety of definitions, it can be viewed from both a social and a personal perspective. On a social level, it can be used as a description of the attributes associated with a group in which a person may belong, such as ‘teachers’, ‘parents’ or ‘mountaineers’. However this is problematic in itself as people are often located in a wide variety of groups and may have multiple identities (Jones and Younie, 2014). On a personal level, Fearon (1999) suggests that identity is associated with underlying values, attitudes and beliefs about what it is to be ‘who you are’. However, this

is also problematic as people may share values, but be in conflict because they have different social identities, for example Northern Ireland religious groups.

Both culture and identity can be seen as organic processes of ongoing development and assimilation into a context. Alexander (2000) suggests that in order to make sense of any educational policies, then history and culture should frame the analysis. Not only the policies, but pedagogical practice itself is also embedded in shared cultural histories, values and beliefs. Osborn *et al.*, (2003) support this view. In their study comparing learners across Europe they found that, “neither the act of teaching nor the learning experience of pupils can be de-contextualized from the school and country in which it is set” (2003:101).

They added that certain differences could be determined in classroom contexts between the three countries in their study, which are based on underlying educational values, which they listed as:

- The concept of class (school)
- Classroom interiors
- Approaches to pedagogy and pupil groupings
- Teacher control
- Pupil autonomy within the classroom
- Methods of assessment
- Definitions of learning
- The place of adolescent culture

(2003:104)

Although only one of these countries is the same as in the context of this research and their research was concerned with co-located / face-to-face schools, their findings may help to inform understanding regarding factors which inhibit or contribute to pedagogical shifts. In the context of this research, perspectives on cultures and identities can be viewed at a national educational level, as well as on a local and individual school level and even classroom level. Within schools there may be differences between various student groups, teacher groups and other communities associated with the

school such as governing bodies. These differences may or may not affect the ability of ELvis teachers to engage in pedagogic shift.

### 1.3.3 Similarities and Differences in Participating EU School Systems

Across the EU there are thirty-six different education systems. As the focus of this research is concerned with five countries, only these will be looked at in detail. All countries that are members of the EU are signed up to the Europe 2020 Strategy - a policy document which outlines key priorities for growth over the coming decade to improve the competitiveness of the EU in the global market (EC Communication, 2014). The strategy has been driven by the economic crisis and a realization that the EU as a whole is doing less well than other developed countries. Europe 2020 outlines five smart, sustainable and inclusive targets, one of which is concerned with education. In broad terms there are two main goals:

- Reducing the rates of early school leaving below 10%
- At least 40% of 30-34-year-olds completing third level education  
([http://ec.europa.eu/europe2020/index\\_en.htm](http://ec.europa.eu/europe2020/index_en.htm))

Countries within the EU have translated these into National Targets as are summarized in Table 1.1

Country	National Target relation to Education	Source
Belgium	Simplify and reinforce coherence between employment incentives, activation policies, labour matching, education, lifelong learning and vocational training policies for older people and youth.	Recommendation for a Council Recommendation on Belgium's 2013 national reform programme and delivering a Council opinion on Belgium's stability programme for 2012-2016 (2013)
Germany	None specifically regarding education.	Recommendation for a COUNCIL RECOMMENDATION on Germany's 2013 national reform programme and delivering a Council opinion on Germany's stability programme for 2012-2017 (2013)

Italy	Strengthen vocational education and training, ensure more efficient public employment services and improve career and counselling services for tertiary students. Step up efforts to prevent early school leaving. Improve school quality and outcomes, also by enhancing teachers' professional development and diversifying career development.	Recommendation for a COUNCIL RECOMMENDATION on Italy's 2013 national reform programme and delivering a Council opinion on Italy's stability programme for 2012-2017 (2013)
Netherlands	None specifically regarding education.	Recommendation for a COUNCIL RECOMMENDATION on the Netherland's 2013 national reform programme and delivering a Council opinion on the Netherland's stability programme for 2012-2017 (2013)
England	Building on the Youth Contract, step up measures to address youth unemployment, for example through a Youth Guarantee. Increase the quality and duration of apprenticeships, simplify the system of qualifications and strengthen the engagement of employers, particularly in the provision of advanced and intermediate technical skills. Reduce the number of young people aged 18-24 who have very poor basic skills, including through effectively implementing the Traineeships programme.	Recommendation for a COUNCIL RECOMMENDATION on the United Kingdom's 2013 national reform programme and delivering a Council opinion on the United Kingdom's convergence programme for 2012-2017 (2013)

Table 1.1: A summary of country specific education targets relating to the Europe 2020 Strategy

Table 1.1 shows that neither Germany nor the Netherlands have any specific education targets listed in the Europa 2020 strategy. The goals of the other three countries are varied. The United Kingdom national targets are driven by youth unemployment and poor skills in the eighteen to twenty-four age group. In Italy the national targets are associated with vocational training, the prevention of early school leaving and improving school quality and outcomes through professional development of teachers. In Belgium the national target is bound closely with employment, specifically to gain coherence between employment incentives, activation policies, labour matching, education, lifelong learning and vocational training policies.

The Europe 2020 strategy provides an example of how globalization - a set of interrelated changes, convergences, processes and strategies that occur above the level of the individual nation (Shields, 2013) - has become a driving force behind education policy aimed at economic gain and is at odds with education for self-understanding and fulfilment.

In conjunction with the Europe 2020 strategy, is a second EU Strategy called The Strategic Framework for Education and Training 2020, in which EU countries have identified four common objectives, these being:

- To make lifelong learning and mobility a reality
- To improve the quality and efficiency of education and training
- To promote equity, social cohesion and active citizenship
- To enhance creativity and innovation, including entrepreneurship, at all levels of education and training

*([http://ec.europa.eu/education/policy/strategic-framework/index\\_en.htm](http://ec.europa.eu/education/policy/strategic-framework/index_en.htm))*

These objectives could have relevance for pedagogic shift in virtual international schools, as they enable education for the self to be balanced against education for economics. However, the EU benchmarks and core indicators, which annually monitor progress are concerned, in the main, with student attainment and employment rates.

At the national level, individual countries are not just driven by EU strategies, but also by their own individual political and cultural identities all of which, may contribute to different conceptions of pedagogy and how teachers in a virtual international school approach pedagogic shift. For example, England, Belgium and Italy have single structure education as opposed to Germany and the Netherlands that have differentiated branches or streams, where at the end of primary education or during lower secondary, students are required to follow one or other of the education pathways available. There are also differences in starting and finishing ages of students as demonstrated in Table 1.2.

<b>Country</b>	<b>Primary</b>	<b>Secondary</b>
Belgium (Flemish)	6	12
Germany	6	10
Italy	6	11
Netherlands	4	12
England	5	11

Table 1.2: Age at which students start school in five different EU countries

Table 1.2 presents the starting ages of students in five different countries for both primary and secondary education and are shown to vary with the Netherlands starting earliest at age four.

Political and economic situations also have an impact on education practices within different countries, which may affect the ability of teachers in a virtual international school to engage in pedagogic shift. For example in Italy, over the last two decades, several governments, coming from opposite political coalitions, have been in power. This alternance of opposite governments has also affected the education system, which has been under reform since the late 1990s (Eurypedia, 2014).

Unlike most other countries, Belgium is regulated by three different communities, these being French, German and Flemish speaking. Other than the Federal government deciding on the mandatory age of students for schooling, it plays little other part in education matters. In terms of Federal involvement, this is similar to the German system, where most decisions regarding education have been passed down to the Länder or states. In the Netherlands however, education policy is controlled much more by central government. Different groups who hold power within education sectors of the different countries (see section 3.2.2) may influence teachers' ability to engage in pedagogic shift in different ways in the various countries. Types of school also vary between countries as seen in Table 1.3.



Table 1.3: Types of school in five different EU countries

Country	Type of School
Belgium	General, Technical, Vocational, Art
Germany	Gymnasium, preparing students for university Realschule, for those students who are classed as intermediate Hauptschule, for vocational studies Gesamtschule, which is a combination of Realschule and Hauptschule Förderschule / Sonderschulen, which are special schools for those with learning difficulties
Italy	Lyceum, being more theoretical and less practical Technical Institute, which is both theoretical and practical Professional Institute, which is mainly geared towards vocational work
Netherlands	VMBO, combines vocational training with theoretical education HAVO, typically prepares students for polytechnics VWO, typically prepares students for more academic universities
England	There are eight types of school: Academy Schools, Community Schools, Free Schools, Foundation Schools, Voluntary Aided Schools, Voluntary Controlled Schools, City Technology Colleges (CTC), University Technology Colleges (UTC).

With exception of the City Technology Colleges (CTCs), all the other schools in the UK are so defined because of their organisational background. This is a key difference between schools in the rest of continental Europe, which are defined through the type of study taking place. To some degree this may be explained by Alexander (2004) who suggests that in contrast to the UK, the “scope and balance of the school curriculum had long been centrally determined” (2004:11) in continental Europe. This has indirectly affected notions of pedagogy, Alexander argues, as in the UK, there has been a greater opportunity for debate around curriculum to the detriment of discourse on pedagogy, whereas continental Europe,

“...brings together within the one concept the act of teaching and the body of knowledge, argument and evidence in which it is embedded and by which particular classroom practices are justified.”

(2004:10)

There are also predominant styles of pedagogy in different countries. For example in countries such as Norway, Denmark and Sweden, students tend to engage more in group work. However this is less common in East European countries and the Mediterranean (e.g. Greece, Portugal and Italy)

where teaching tends to be delivered using a lecture approach (Algan *et al.*, 2011).

In the context of a school that spans five different European countries, the differences highlighted in this section could affect the way the teachers come together to form a virtual school as they each have different experiences and perspectives on how schools are structured and are run as well as pedagogical approaches used.

#### **1.4 EuroLink - virtual international school (ELvis)**

In 1996, seven teachers from different EU schools decided to explore the use of the Internet in teaching and learning. Together, as an informal alliance, they tested out the new wave of web based communication technologies, from teleconferencing to collaboration on enterprise projects.

In 2009 the teachers, with approval from their head teachers, decided to bid for EU funds to develop their informal distributed partnership of schools into a virtual international school, in order to learn to teach in collaboration using technologies. The result was the creation of EuroLink - virtual international school, otherwise known as ELvis. Funded over two years in the first instance (ELvis I) running from 2009 - 2011, by an EU Lifelong Learning grant from the Comenius Programme, the ELvis partnership of seven schools (from Italy, Germany, Netherlands, UK and Belgium) set out to research and use new pedagogical approaches to teaching, learning and assessment.

As part of the EU's Lifelong Learning Programme, Comenius aimed to help teachers and students understand European cultures, languages and values by promoting motivation for learning and meta learning skills, European key competences, digital and inclusive education, improving pedagogical approaches and developing teacher training (European Commission, 2011).

In the second instance of EU funding, running from 2011- 2013, the seven schools were joined by one more (from Norway) to form ELvis II. The bid

documentation for ELvis II (Venderbos, 2011) stated that teachers and students aspired to be researchers with a focus of building knowledge and recording progress, which would be disseminated for others wishing to innovate in their practice with web based communication technologies.

The head teachers of each participating school have made a five year commitment through a Memorandum of Understanding to be part of ELvis, based on the following vision documented in the Comenius bid submission:

- To find a way to reach a deeper and more enduring collaboration between the partner schools
- To develop a change in approach to teaching and learning to one which is more appropriate to the 21st century
- To reach this through Action Research and Inquiry Based Learning by teachers and students
- To encourage a more enterprising and creative approach to learning by teachers and students
- To exploit technology to eliminate or reduce barriers to learning and collaboration
- To create an international virtual learning environment to enable us to do all this
- To find a way of getting the work that is done, accreditation in the schools and if possible by 'awarding bodies'

(Venderbos *et al.*, 2009:8)

These objectives were formulated and agreed by the head teachers and co-ordinators of each school. Many of the schools are rural and some view themselves as 'disadvantaged'. All the schools were used in this research and Appendix 1 provides a description of the schools including a brief text on how they view themselves.

According to the external critical friend (a retired teacher and educational technology consultant and researcher who had previously worked with the group in the late 1990s), ELvis operates by consensus. Through collaborative discourse in a non-hierarchical environment, representatives from the schools were seen by the critical friend as trying to learn and negotiate new meanings, structures and a shared vision to build a new school and embed new teaching practices within this school, using web based communication technologies

(Moss, 2010). So the learning in which teachers are engaged, can be said to be socially constructed (see section 3.3). Decisions are reached through agreement. This process is facilitated by a head teacher, a teacher and the critical friend, who form an executive group called the Guiding Coalition. The critical friend is called upon by the other two in the Guiding Coalition, as and when they need him. The Guiding Coalition is self-selecting and has been endorsed by the rest of the head teachers and co-ordinators. The structure is represented in the Figure 1.1.

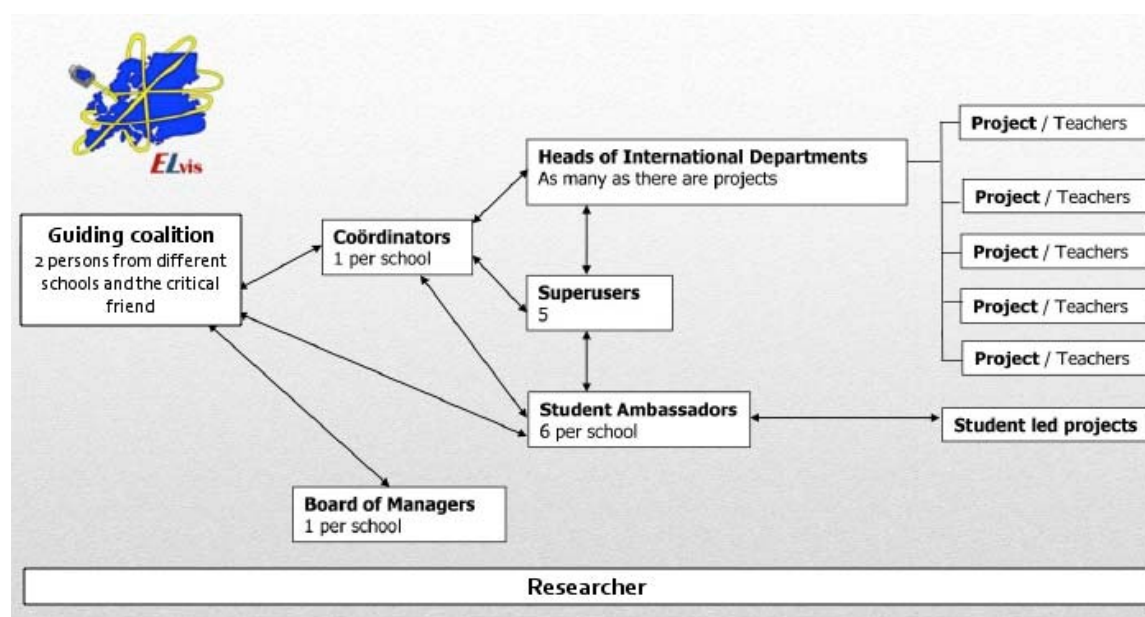


Figure 1.1: ELvis structure, (Venderbos, 2013)

Teachers in the ELvis group are also self-selecting. It is completely up to them if they want to be part of a project in ELvis. Projects are selected in a variety of ways. For example, if a teacher has an idea for a project then they can connect with other teachers in the partner schools and talk about progressing the idea. Subject leads can call for international department meetings, which may happen either face-to-face or online. At the beginning of each academic year, co-ordinators suggest ideas they or teachers in their schools have had and interested staff are put into contact with each other to develop and run projects in ELvis, which help the teachers to realise the ELvis vision. The superusers are teachers from the distributed partnership of schools who help the teachers integrate the Virtual Learning Environment (VLE) into projects.

The student ambassadors are those students who are selected by co-ordinators to champion ELvis in their respective schools.

ELvis operates in a blended environment using both face-to-face meetings and a variety of online web based communication technologies. Projects are run mainly online but sometimes with students meeting face-to-face. Across the school year (September to May) a variety of face-to-face meetings take place at one of the schools. A different school is used each time and different staff and students attend depending on the purpose of the meeting. Each year is different but follows a rough pattern as identified in Table 1.4.

<b>Time</b>	<b>Meeting</b>	<b>Purpose</b>
September	Guiding Coalition and Managers (head teachers, principals)	To confirm continued participation and identify issues
November	Guiding Coalition, ELvis Co-ordinators and Departmental Meetings	Plan the year ahead
January	Ambassadors (student leaders) with teachers	To plan projects and develop relationship
March	Guiding Coalition, Co-ordinators, teachers and students	To finish projects, showcase work and plan new projects
May	Guiding Coalition and Co-ordinators	To evaluate the year and make initial preparations for the next year

Table 1.4: Typical plan of face-to-face meetings in any ELvis school year

Meetings usually last between two and four days. When students attend, between four and six are chosen by each school. Student attendance at face-to-face meetings is used by teachers as an incentive for students to complete work in the ELvis projects and usually, it is those who have made the best efforts from across the projects, that are selected for attendance. These meetings are inter-dispersed throughout the year, with occasional face-to-face department meetings, where colleagues and students from the same subject areas (e.g. History) from across the participating schools, come together to work on or plan new projects. At the end of the first operational year, the

researcher joined the team to a) explore pedagogic shift in the virtual international school and through this research b) help the ELvis group identify barriers and challenges, which they face in realizing the ELvis vision and to suggest and trial strategies to overcome these. The relationship between the researcher and the school is discussed in more detail in section 4.4.3 in Chapter 4 - Research Design.

## **1.5 Summary of Research Design**

Due to the complex nature of this research and the shift in research focus as a result of the first phase of the research (Cycle I, Pilot Study), a brief summary of the research design is now presented to aid the reader.

### **1.5.1 Initial Research Questions**

This research uses a constructivist grounded theory approach within an interpretive paradigm (see section 4.2.2). The research explores the concept of pedagogic shift in virtual international schools using the specific context of a distributed partnership of seven schools called ELvis, located in five different EU countries. The ELvis vision was to collaboratively develop “new approaches to teaching, learning and assessment” (ELvis website, 2014:online). In helping ELvis to investigate the barriers and challenges faced in realizing the ELvis vision, the researcher was invited to lead the annual evaluations (see section 4.4.3). During this time a research focus developed to explore the use and adoption of web based communication technologies as teachers shifted their pedagogies towards teaching in collaboration and integrating technology. In order to address the pilot research focus, three initial pilot research questions (IPQR) were developed for the pilot study.

They were as follows:

IPRQ1: How do teachers engage/learn within ELvis?

IPRQ2: How have the emerging technologies been employed to support learning?

IPRQ3: What processes and strategies have needed to be in place for this to happen?

The initial exploration of these questions is discussed fully in Chapter 2 – Cycle I (The Pilot Study).

### **1.5.2 Refined Research Questions**

The results from the pilot study, (see section 2.4), did not answer the initial research questions. Instead the pilot data demonstrated that pedagogic shift had not occurred, which led to the development of a problem statement and extensive literature review (see Chapter 3). From this literature review and pilot study findings, two new research questions (RQ) were formulated as follows:

RQ1: Are curriculum design, teaching strategies and technology integration changing over time?

RQ2: What factors are inhibiting and/or contributing towards any change?

These research questions are discussed in full in Chapter 3, section 3.8.

### **1.5.3 Cycles of Research**

In order to answer the research questions, data was collected over the course of three cycles of research from the teachers, ELvis co-ordinators and other teachers in each of the participating schools. The participating schools and participants are detailed in table 1.5. For definitions of school types, please refer to Table 1.3. For more detailed information on each school, please see Appendix 1.

<b>Country</b>	<b>School Type</b>	<b>Number of Participants</b>
Netherlands	HAVO and VWO Secondary School	1 head teacher 1 ELvis co-ordinating teaching 3 teachers
Germany Nordrhein- Westfalen	Gymnasium	1 head teacher 1 ELvis co-ordinating teaching 3 teachers
Germany Hesse	Gymnasium and Gesamtschule	1 deputy head teacher 1 ELvis co-ordinating teaching 4 teachers
Germany Niedersachen	Gesamtschule	1 head teacher 1 ELvis co-ordinating teaching 3 teachers
Italy	Lyceum	1 head teacher 1 ELvis co-ordinating teaching 1 teachers
Belgium	General Secondary School	1 head teacher 1 ELvis co-ordinating teaching 3 teachers
England	An Academy Trust Secondary School and Sixth Form College	1 head teacher 1 ELvis co-ordinating teaching 3 teachers

Table 1.5: Participants and Schools in this Research Study

The three cycles of research were carried out including the Cycle I (Pilot Study), Cycle II (Identification of Key Themes) and Cycle III (In Depth Exploration of Key Themes) as detailed in the Figure 1.2. Emerging from these cycles was a conceptual model of pedagogic shift, which is fully discussed in Chapters 6 and 7 of this thesis.



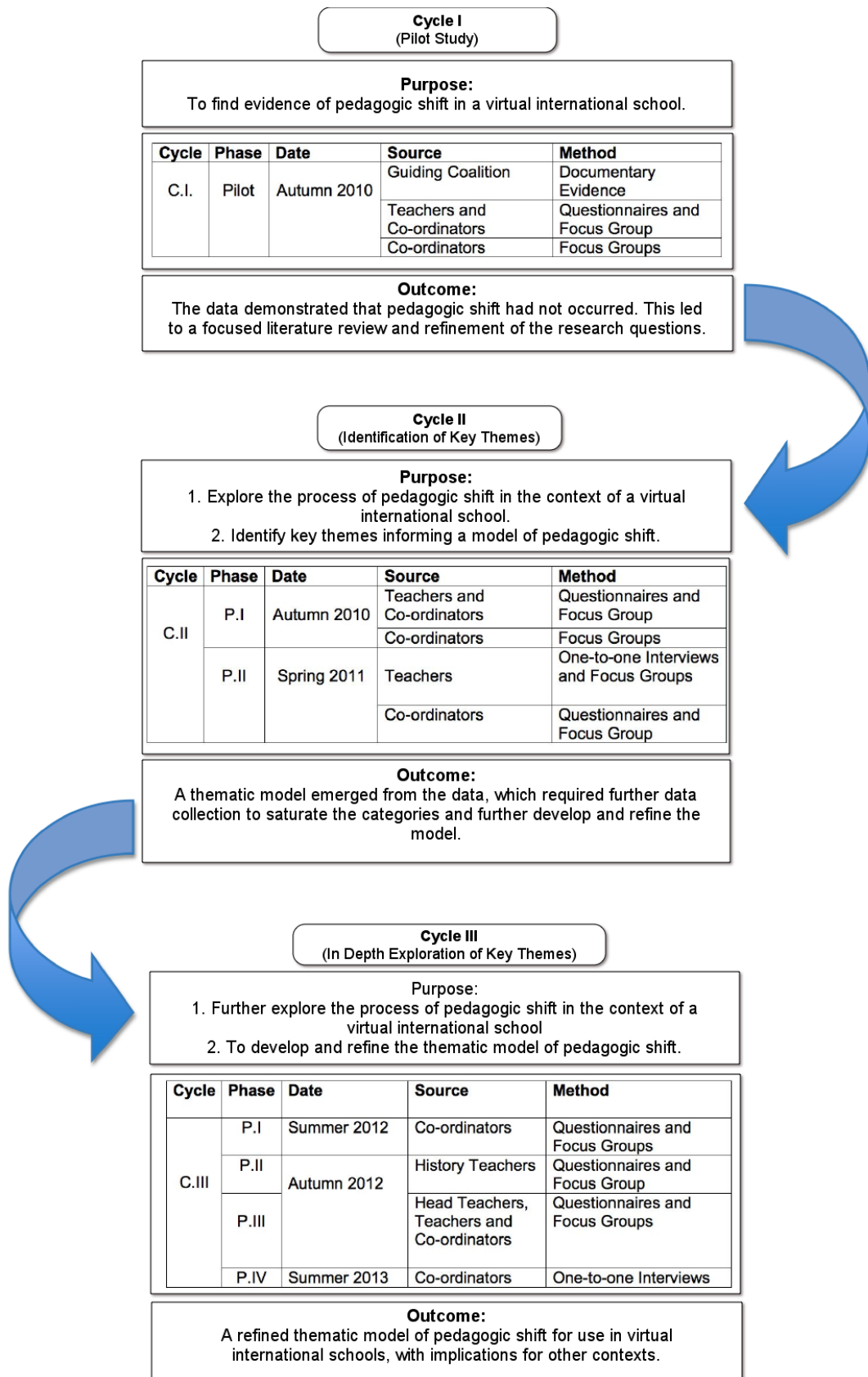


Figure 1.2: The research design summary, illustrating the purposes, phases, methods and outcomes of the three research cycles

## 1.6 Personal Statement

### **1.6.1 Purpose of the Personal Statement**

This research uses a constructivist grounded theory research approach, which requires the researcher to both have expertise in the field of inquiry and to provide a position statement explaining their background and experience. This is fully discussed, including how bias is dealt with, in Chapter 4, section 4.4. Articulating the personal statement in the first person also heightens awareness (Mills *et al.*, 2006a) of any assumptions or preconceptions. To this end, a personal statement is provided to enable the readers to determine any preconceived ideas held, regarding pedagogic shift.

### **1.6.2 Researcher's Prior Experience and View of Learning**

My view of learning, which is derived from a social constructivist perspective, is discussed here. In this view, which is based in the Vygostkian tradition (section 3.3), learning is seen as an iterative process. This philosophical stance has informed the key research and teaching in which I have been engaged in the previous fifteen years, as outlined in the following section.

As this research is concerned with pedagogic shift in a virtual context, this section of the chapter sets out my past research and teaching experiences, which have shaped my own conception of pedagogic shift in a virtual international context.

I am interested in the field of pedagogic shift in a virtual international context, as it has related to my own teaching and consultancy practices throughout the last fifteen years. I have had to transform my own understanding of teaching and learning from a classroom teacher to someone who works as part of a distributed team, using web based communication technologies in my day to day work. Through my work I have also learned how others shift their teaching practices through technology integration, which has excited my interest in the processes and factors that inhibit and/or contribute to pedagogic shift.

My interest started to develop in the late 1980s, when I worked at the Chelsea and Westminster Hospital in London researching vitiligo in immune compromised patients. With this, came my first real introduction to cutting edge technology. During random trials on a nutritional supplement, I would leave the computer on, one evening a week and at some point during that evening our US counterparts would connect to our computer through the modem and download all the data onto their computers at HQ in Denver. I thought it was amazing that we could communicate over such huge geographical distances using computers. This was in the late 1980s, early 1990s when the commercialization of the kinds of technology we take for granted today, such as emails and the world wide web (www) were only just beginning to take place. Even mobile phones were in their infancy.

I then retrained, doing a one year PGCE and began teaching in secondary schools. During this time I gradually became familiar with mobile phones, emails and the www, as they became more widely available. Then in 1999, I began working for ULTRALAB, a learning, technology, research unit at Anglia Ruskin University (ARU) as an Advisory Teacher on the *Tesco SchoolNet 2000 (TSN2K)* Project. Here I made another leap in my understanding in how previously held assumptions of teaching and learning could be challenged with the introduction of emerging web based communication technologies. The notions of both time and audience's geographical distribution drifted into my consciousness, although the implications of this on pedagogic shift did not come until later. From the *TSN2K* Project, I began working full time with ULTRALAB. Until its closure in December 2005, ULTRALAB was considered to be a leading international organisation as demonstrated by the following quotes:

“ULTRALAB is Europe's leading research institute pioneering leading edge applications in support of proven educational precepts”

Oracle Corporation (1999:online)

“One of the most respected research centres in e-learning in the world”

It was at ULTRALAB that I gained my most meaningful experiences related to the field of pedagogical shift in online contexts. From 1999 to 2005, ULTRALAB operated in a distributed manner, with only about twenty of the eighty strong team located at the central office. Everyone else worked remotely from home but connected and collaborated daily in a virtual office space, using a variety of web based communication tools both synchronously and asynchronously. We lived what we preached and innovated in our own practice as well as in our projects.

My first project, which began in 1999 was *Talking Heads*. Primarily an online community of practice, it was set up in conjunction with the Department for Education and Employment (now the Department for Education) to reduce the isolation of head teachers in England and Wales and increase their opportunities for informal and formal professional development. My specific role was to pilot and trial a variety of strategies to develop *Talking Heads* into a vibrant and purposeful online community. I was able to gain some anecdotally invaluable insights into how pedagogic shift was enabled with facilitative support and the use of web based communication technologies.

My expertise developed further in projects such as:

*eViva* - a two-year project funded by the Qualifications and Curriculum Authority (QCA) from 2002 - 2004. This was a “blue skies” pilot project, which used mobile phones, voice recognition technology and the Internet to support summative and formative assessment.

*ULTRALAB Learning* - was a professional development online community for approximately 500 educationalists. It consisted of ULTRALAB itself, a working environment for eighty plus colleagues, three-quarters of who were remotely located and *Ultraversity*, an online community of 400+ undergraduate workplace degree learners and their online facilitators.

Anglia Ruskin University (ARU) Blended Learning Project - an Higher Education Funding Council for England (HEFCE) funded project to set up one blended teaching and learning pathway of study in each of the five faculties at ARU, using ULTRALAB as a consultant.

Over the years of these projects my initial understanding of the power of web based communication technologies in enabling individuals and groups to develop new ways to teach and learn, particularly in online communities, was consolidated and has continued to develop through the further project work in which I have been involved. No longer do I think of emerging technologies as a novel way of communicating, but rather as a continually evolving platform for reflecting, connecting, sharing, learning, collaborating and broadcasting. In (2008), suggests technology has begun to transform learning as we know it.

Throughout all the projects described above, some common elements have emerged which are now explicitly articulated here as they relate to pedagogic shift in a virtual context.

All of these projects have been centred on exploring how, through collaboration, participants co-construct knowledge - social constructivism - using innovative web based communication technologies. This was made possible through a highly skilled facilitation team who honed their practice over a number of years resulting in a transformative change in teaching practices with technology integration - or put another way - a pedagogic shift. In enabling learning to take place, most of the facilitation and teaching used throughout all the projects has incorporated either formally or informally, an action research or inquiry based learning approach. Using these frameworks for learning, participants have been able to challenge their assumptions of pedagogy. Lastly, I have been in a co-researcher relationship during these projects, where alongside the role of enabling others to learn, I have been researching the teaching practices employed and shifting my own assumptions about successful pedagogies, which are collaborative and integrate technologies. These common elements have given me a starting

framework in which to explore pedagogic shift in the context of virtual international schools.

In my core teaching, research and management practices, I continue to work in a geographically distributed team. The team works largely in a virtual office, developing innovative teaching processes using web based communication technologies. In particular we aim to develop the craft of teaching and ability for individuals to learn with web based communication technologies both by developing new forms of organisation in education and by exploiting the new opportunities offered by new tools - computer programs, communication networks and other technologies. In my most recent work, my role has now changed to become a facilitator of teachers, knowledge management teams and other community facilitators, to help them challenge their preconceived ideas on pedagogy to empower their learners or community members.

### **1.7 Organisation of the Chapters**

As this research uses a constructivist grounded theory methodology (Charmaz, 2000) Chapter 2 presents the initial pilot exploration into the research context before moving to Chapter 3, the literature review. Glaser (1994) suggests that a literature review should not be carried out before a preliminary round of data collection and analysis has taken place, as the outcomes of the review may be suggestive for the researcher, hindering the process of discovery. As well as yielding findings, which shaped the focus and direction of the main study, Chapter 2 (Cycle I - The Pilot Study) provided a platform for trialling data collection methods and data analysis techniques. This is also discussed in Chapter 2. Based on the preliminary findings gathered in the pilot study, a focused body of literature was identified. Chapter 3 provides a critical evaluation of this literature and in so doing identifies the gap in knowledge, which this research addresses, including the refined research questions, the distinct contribution to knowledge and the intended audience.

Chapter 4 then articulates the research design, which is underpinned by an interpretive approach, using an inductive methodology derived from constructivist grounded theory (Charmaz, 2000). Chapter 5 then presents Cycle II (Identification of Key Themes) of the study, including data collection, analysis and discussion of findings. Chapter 5 proposes the emergence of eleven data categories associated pedagogic shift. Chapter 6 reflects upon these categories, re-organising them into themes and proposes an initial thematic model of pedagogic shift. This leads into Chapter 7, which presents the data collection, analysis and discussion of findings from Cycle III (In Depth Exploration of Key Themes) of the research, detailing a thematic model of pedagogic shift for use in developing virtual international schools. Finally, Chapter 8 draws the thesis to a conclusion, providing notes on the limitations of the research, final reflections and suggestions for the further research.

## **1.8 Summary**

This chapter has introduced the reader to the research context by presenting an overview of an emerging educational philosophy and defining the concepts of pedagogic shift and virtual international schools. The specific EU context, from which the data are drawn, is presented and contextualized within the European strategy on education. A summary of the research design including the research questions is discussed followed by a personal statement from the researcher. The following chapter provides a detailed description of the Cycle I (The Pilot Study).

## **Chapter 2 - Cycle I (Pilot Study)**

### **2.1 Introduction**

This chapter outlines the Cycle I (Pilot Study) research, the purpose of which was twofold, firstly to explore the use and adoption of web based communication technologies as teachers shifted their pedagogies towards teaching in collaboration and integrating technology and secondly, to trial data collection methods and data analysis techniques based on a constructivist grounded theory (Charmaz, 2000) approach. The data collection methods and data analysis techniques associated with constructivist grounded theory, are explained in full in Chapter 4 - Research Design. Glaser (1994) suggests that a literature review should not be carried out before a preliminary round of data collection and analysis has occurred, as it may be suggestive for the researcher, hindering the process of discovery. A chapter regarding the pilot study is warranted at this point in the thesis as the pilot study took place at the outset of the research journey and data emerged, which changed the focus and direction of the main study. This chapter mainly focuses on those findings to illustrate how they have shaped the direction of the main study.

ELvis was set up to be an innovative virtual international school, where learning, teaching and assessment practices were breaking new ground, (see section 1.4). The initial research focus was to explore the use and adoption of web based communication technologies as teachers shifted their pedagogies towards teaching in collaboration and integrating technology in the virtual international school setting provided by ELvis. In order to address the research focus, three research questions were developed for Cycle I (Pilot Study). They were as follows:



- How do teachers engage/learn within ELvis?
- How have the emerging technologies been employed to support learning?
- What processes and strategies have needed to be in place for this to happen?

## 2.2 Cycle I (Pilot Study) Data Collection

Data were collected during the autumn of 2010, trialling three data collection techniques (see Figure 2.1), these being documentary data, questionnaires and focus groups, as discussed in this section. The use of different data collection techniques is discussed fully in Chapter 4 - Research Design.

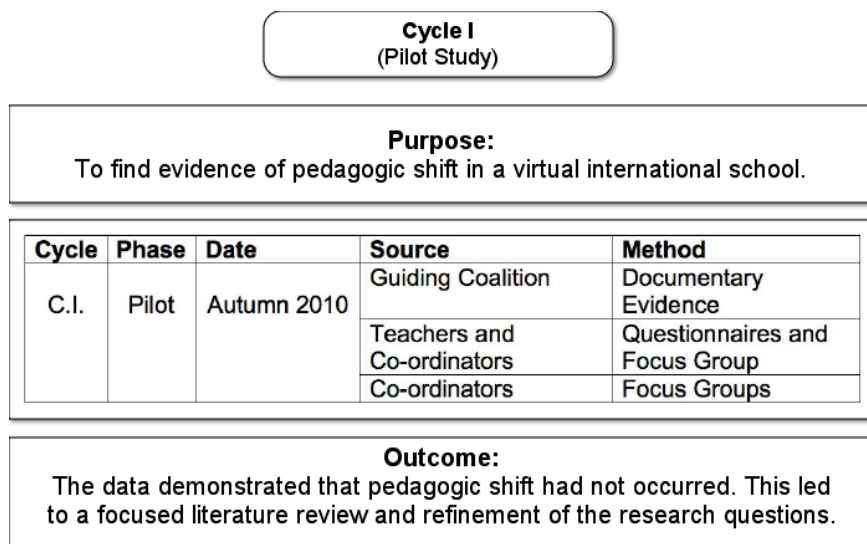


Figure 2.1: Summary of Grounded Theory Research Cycle I (Pilot Study)

### 2.2.1 The Collection of Documentary Evidence

Three reports were shared with the researcher in the autumn of 2010. These are detailed as follows. During August 2010, one of the ELvis Guiding Coalition visited five out of seven schools in ELvis, to gather data *via* interview asking them for some reflections from year one. He informally interviewed school co-ordinators and head teachers to get a general feel for how ELvis was progressing and wrote up the responses in a report (Ash, 2010a). He

shared this report with the researcher together with a review report of year one prepared by him for the European Union funders (Ash, 2010c). An initial reflective account of ELvis from the ELvis critical friend, (Moss, 2010) was also passed to the researcher. These three reports were created as part of the usual reflective cycle of ELvis, although the report sent to the European Funders was created as a requirement of the funding agreement. These reports formed the documentary evidence used in the Cycle I (Pilot Study) data analysis (see section 2.3.1).

### **2.2.2 The Collection of Data from Questionnaires and Focus Groups**

During the autumn term 2010 meeting of ELvis teachers and co-ordinators in the Netherlands, participants were asked a series of questions by the researcher *via* two methods, questionnaires and focus group discussions, (see Appendix 2). Participants were invited to answer the questionnaire individually during a morning session, after which a whole group discussion including both teachers and co-ordinators followed. The aim of the questionnaire was twofold. Firstly it was to focus the teachers' minds on pedagogy and the ELvis projects outcomes, without the influence of other people's opinions, prior to a more general sharing of reflections in a focus group discussion and secondly it was to provide data for Cycle I (Pilot Study).

In the afternoon there was a further focus group discussion, which lasted half an hour with the school co-ordinators only. They were separated out from the teachers as they carry the overview of how ELvis works in their respective schools. This focus group discussion was led by a member of the ELvis Guiding Coalition. The researcher was permitted to sit in and take notes, but not to lead the discussions. The purpose of this discussion was to give co-ordinators the opportunity to expand on the opinions that they did not have time to voice in the morning session as well as to voice issues about the virtual international school as a whole, rather than regarding the running of specific projects. The researcher recorded notes regarding the issues raised by the participants. The analysis of data collected in this cycle is presented in section 2.3.2 of this chapter.

### 2.3 Presentation of Cycle I (Pilot Study) Data

The data collected throughout Cycle I (Pilot Study) was transcribed into rich text format documents and then inputted to data analysis software (HyperRESEARCH Vs. 3.0.2). All schools and respondents were anonymised and are represented throughout this research with their unique identifier (e.g. School ID:3 or the name of a tree in the case of a person). Please see section 4.3 of Chapter 4 for more details on the process of data analysis. Through conducting line-by-line analysis, twenty-six codes emerged from the data, which were then grouped into seven categories and summarized in Table 2.1. For example, within the category of 'VLE', six codes occurred, the most frequently occurring being 'VLE difficulties', which were mentioned twenty-nine times.

Category	Code	Number of Coded Phrases
VLE	vle difficulties	29
	need for vle training	5
	non vle communication	9
	need for cpd	5
	poor computer access	5
	hesitancy with vle	1
	<b>Sub Total</b>	<b>54</b>
Organisational	organisational problems	18
	staff leaving / illness	3
	timing different between schools	1
	student age issue	1
	<b>Sub Total</b>	<b>23</b>
Teaching	teaching approaches	15
	<b>Sub Total</b>	<b>15</b>
Students	student perceptions	11
	<b>Sub Total</b>	<b>11</b>
Leadership	positive leadership	2
	management issues	4
	lack of cohesion between school and ELvis	1
	no leadership	1
	<b>Sub Total</b>	<b>8</b>
Non engagement	lack of interest in ELvis	2
	staff not engaging	1
	lack of engagement	4
	<b>Sub Total</b>	<b>7</b>
Outliers	language difficulties	3
	facilitation	2
	fragmentation	2
	future possibilities	2
	relationship building	2
	difficulties with accreditation	1
	no research	1
	<b>Sub Total</b>	<b>13</b>

Table 2.1: A summary of emerging codes and categories from Cycle I (Pilot Study) data analysis

The category with the highest occurrence of coded phrases was 'VLE' (n=54). The most often cited issue in this category was coded as 'VLE difficulties' (n=29) accounting for over half of all phrases analyzed in this category. Example quotes regarding 'VLE difficulties' are as follows:

From Documentary Evidence: "VLE too complicated for the teachers"

From Questionnaire: "they were never registered in the VLE so they could not collaborate"

From Focus Group: "it is difficult to get started a course at the same time as learning how to use the VLE"

Memos associated with these quotes: Are negative experiences with VLE/technology hindering ability of teachers to engage with pedagogic shift? How is the VLE too complicated, do the teachers not have the skills to negotiate the difficulties or is there some other barrier?

As with 'VLE difficulties' the rest of the codes that emerged in this category were about issues relating to the integration of the VLE into teaching practices, these being: 'no VLE communication' (n=9); 'need of VLE training' (n=5); 'need for CPD' (n=5); 'poor computer access' (n=5); 'hesitancy with VLE' (n=1).

The category with the second highest occurrence of coded phrases was 'Organisation' (n=23). The most often cited issue in this category was coded as 'organisational problems' (n=18), accounting for all but five of the phrases analyzed in this category.

Example quotes regarding 'Organisation' are as follows:

From Documentary Evidence: "I could not do the project at the same time as Hornbeam did it in School ID:7, so our students never got to communicate with each other"

From Questionnaire: "fitting an ELvis project into the constraints of the required curriculum"

From Focus Group: “it was partly difficult to connect the projects into the curriculum”

Memos associated with these quotes: Is curriculum fit a problem because of different teaching practices employed, or is it due to subject matter or timing of projects? If they are unable to run projects, then the teachers will be unable to engage in pedagogic shift.

As with ‘organisational problems’ the rest of the codes that emerged in this category were about issues preventing teachers to explore new teaching practices, these being: ‘staff learning / illness’ (n=3); ‘timing different between schools’ (n=1); ‘student age issue’ (n=1).

The category with the third highest occurrence of coded phrases was ‘Teaching’ (n=15) with all the phrases analyzed falling into the code as ‘teaching practices’.

Example quotes regarding ‘Teaching Practices’ are as follows:

From Documentary Evidence: “The students need guidance on how and what to do”

From Questionnaire: “we need to think more about the process”

From Focus Group: “I let them get on with it, without too much input from me. I think I should have given them more material on the VLE to investigate in some instances”

Memos associated with these quotes: Teachers appear to be reflecting on their teaching practices. Teachers are thinking about how to support their learners although it is not clear whether they know how to do this.

The category with the fourth highest occurrence of coded phrases was ‘Students’ (n=11) with all the phrases analyzed falling into the code as ‘student perceptions’.

Example quotes regarding 'student perceptions' are as follows:

From Documentary Evidence: "All students involved in the projects enjoyed working on them."

From Questionnaire: "some students came back from the first meeting and gave me feedback that the project looked boring"

From Focus Group: "some students did not like the topic. Some students did not like to work in a group. Not all groups' members worked together well"

Memos associated with these quotes: Why are some students disengaged / de-motivated and others seem to enjoy projects? What have teachers done regarding their teaching practices to try and resolve the issue of de-motivation and what have others done to make the projects look interesting? Is it to do with a process or presentation or something else?

The category with the fifth highest occurrence of coded phrases was 'Leadership' (n=8) with phrases distributed over the following codes; 'management issues' (n=4); 'positive leadership' (n=2); 'no leadership' (n=1); 'lack of cohesion between ELvis and schools' (n=1).

Example quotes regarding 'management issues', the code with the highest occurring phrases analyzed are as follows:

From Documentary Evidence: "Head teachers used to delegating which is not enough when cultural change is needed. They need to be engaged and very supportive"

From Questionnaire: "Devolved responsibility is something that has proved not to work"

From Focus Group: "Everybody says that the head teacher backing is key to project success."

Memos associated with these quotes: It appears that leadership plays a key part in enabling pedagogic shift to take place in the context of a virtual international school that consists of a distributed partnership of schools. But to

what extent and what does leadership look like in a virtual international school?

The category with the sixth highest occurrence of coded phrases was 'Non Engagement' (n=7) with phrases distributed over the following codes; 'lack of engagement' (n=4); 'lack of interest in ELvis' (n=2); 'staff not engaging' (n=1).

Example quotes regarding 'lack of engagement, the code with the highest occurring phrases analyzed are as follows:

From Documentary Evidence: none were found

From Questionnaire: "there was a lack of enthusiasm / response from some colleagues"

From Focus Group: "discussion threads are confusing and people give up rather than trying look everywhere to find a conversation they're interested in"

Memos associated with these quotes: Although technology seems a barrier to teacher engagement, this is not always the case. Some colleagues do not appear interested. What motivates teachers to get involved in virtual international schools?

There were also a series of 'Outlier' coded phrases, which did not fit into any of the emergent categories (n=13). With the exception of 'language difficulties' (n=3) all other outliers occurred either twice or once only. They included: 'facilitation' (n=2); 'fragmentation' (n=2); 'future possibilities' (n=2); 'relationship building' (n=2); 'difficulties with accreditation' (n=1); 'no research' (n=1).

Memo associated with these codes: some of these codes could be associated with pedagogic shift and need to be discussed in the findings' section.

## **2.4 Reflection on the Data Collection and Analysis Process**

The Cycle I (Pilot Study) was an opportunity to discover new insights to inform the main study, as well as being a place to trial data collection tools and data analysis techniques. Although the chosen tools and techniques are discussed in detail in Chapter 4 - Research Design, here follow some initial reflections.

### **2.4.1 Reflection on Data Collection**

The questionnaires, gathered in the autumn of 2010, were open, in line with constructivist grounded theory (see section 4.3.2) and the need for data to emerge without being too prescriptive. Both the question style and space on the form, allowed for detailed answers from respondents, however they only gave superficial details and some questions were not answered. There could be a host of reasons for this. For example, this was the first time the researcher had worked with the group and perhaps more relationship building (Charmaz, 2014) was required prior to offering the questionnaire. Perhaps respondents were not used to this kind of reflective exercise or maybe it was because of the lack of engagement in projects, which prevented them from answering the questions. It was not possible to make the questionnaires more prescriptive, otherwise data could not emerge naturally. In order to address this issue, the questionnaires were used as a platform for focus group discussions in the main study.

Useful data were gathered from the focus groups, which were audio recorded directly onto a computer. Respondents appeared happier to talk freely with each other about ELvis and with careful probing from the researcher, detailed discussions about pedagogy ensued. Some data were lost as participants spoke over each other.

The interrogation of documentary evidence did not yield any data that were relevant to the study. This was because it was too superficial or had been specifically written for a purpose that was outside of the scope of this research. Therefore, it was decided that this data collection method would not



be used in the main study (Cycles II and III).

In order to triangulate the data collected through questionnaires and focus groups, open-ended interviews were added to the data collection tools for the main study (see section 4.3.3).

#### **2.4.2 Reflection on Data Analysis**

In the data analysis section of Cycle I (Pilot Study) there was an opportunity to practice the different stages of coding (see section 4.3.3) used in constructivist grounded theory analysis.

In following the procedures of Open (developing categories) and Axial (interconnecting categories) coding, a large number of codes were generated which was unhelpful to begin with, until a process of constant comparison began, at which point the codes could be meaningfully grouped. On reflection, some of the codes were more descriptive (e.g. 'learning about music'), rather than analytical (e.g. 'meeting raises motivation'). Indeed, at times the coding was over complicated, such as in trying to extrapolate very detailed data, where it did not really exist. For example in one section the following phrase "we did not have a superuser in our class, or in our school and err if we had a problem, ahh, we had to ask a superuser from another country" was coded as 'complexity', whereas really it should have been coded as 'superusers', a sub-code of 'VLE'.

#### **2.5 Discussion of Cycle I (Pilot Study) Findings**

ELvis was set up to be an innovative virtual international school, where learning, teaching and assessment practices were breaking new ground as teachers explored new teaching practices with web based communication technologies. From the data analysis, it was clear that this was not the case. The analysis of the data did not show any pedagogic shift. Rather, teachers reported barriers and challenges to innovating with teaching, learning and assessment, these being mainly technical or pedagogical in nature.

The data suggested that a key reason for a lack of change in teaching practices was due to issues associated with the VLE. Rather than finding teachers who were changing their current isolated teaching practices to teaching in collaboration with others through the integration of web based communication technologies into those practices, the data revealed teachers lack of ability to use the VLE. However the analysis of the data could only shed light on superficial issues, rather than any underlying reasons. For example, it was often commented that collaboration did not appear to be taking place, although the reasons for this were not evident from the data analysis. Examples of such comments included, “colleagues are hesitant of using the VLE”, “people need to login regularly at least once a week” and “encourage/enable students to communicate with other schools”. Such comments gave rise to further questions such as, why is there hesitancy, what prevents/encourages people to visit the VLE and what processes are in place to encourage or empower teachers to engage in pedagogic shift.

A second key reason preventing teachers from engaging in pedagogic shift emerged from the data associated with organisational issues. These included, for example, staff leaving, students not coping with projects because they were too young and failure to get projects off the ground because schools ran projects at different times in the academic year. However, most of the data in this category related to either the organisation of the curriculum such as “it was partly difficult to connect the projects into the curriculum” and “less open themes for the projects, tighter focus” or the way in which teachers design the curriculum, for example, “it was an extra, not ‘integrated’ into the curriculum, so it took extra time” and “it was partly difficult to connect the projects into the curriculum. In many subjects there is no time to work with extra themes”.

These last two quotes demonstrate how the two issues of ‘curriculum fit’ and ‘time’ are related. These suggest a complexity associated with pedagogic shift that involved not just teachers changing their teaching practices with technologies, but other processes or structures which are external to the teachers’ locus of control that might need to be present for pedagogic shift to take place. Data emerged within the ‘leadership’ category, which would

support this view of complexity. For example, those from whom the data were collected deemed senior management from the individual schools as an important factor in ELvis success, however, it was noted by one person that head teachers in particular, are used to delegating and that this approach will not work if teachers are to work collaboratively in the virtual international school. Where leadership had been a success, this related to activities carried out by members of the ELvis Guiding Coalition, demonstrating that leadership exists on at least two different levels, that of the distributed partnership of schools and that within ELvis itself.

The data which emerged about 'teaching practices', rather than demonstrating how pedagogic shift is occurring, pointed towards reflections on what teachers felt they should be doing, rather than what they are doing, for example, "we need to give students clear tasks and more responsibility", "I should be more clear and precise in my instructions", "the projects so far have been comparative and not collaborative". However, the comments were general, giving rise to further questions such as, what teaching practices have the teachers employed, why have they not worked, what does 'give students more responsibility' mean in terms of pedagogic shift?

Another element related to pedagogic shift that emerged from the data were 'student perceptions'. As discussed in the definition of pedagogic shift in Chapter 1, section 1.2.2, implicit to this definition is that teachers are engaging in pedagogic shift to improve their practice for the benefit of their students. Therefore data that demonstrates students' views is valuable in exploring pedagogic shift. Many of the 'student perceptions' comments related to interest or motivation such as these two examples, "some students who did not go on the face-to-face visit lost interest in the solar panel project after the visit had taken place" and "some students came back from the first meeting and gave me feedback that the project looked boring". In the first quote, it seems that visiting students from other countries was the motivating factor. This gave rise to questions such as, is student collaboration across countries being embedded into projects? How are visits to schools in other countries related to the project design? Project design questions were also raised by

the second quote where students felt the project was boring.

Other comments identified positive responses to the projects, such as this comment,

“The kids (twelve - thirteen year olds) were enthusiastic about doing a project outside of their course book. They liked looking for information on the Internet. They were proud they could understand (some) complex English texts. They produced English texts (we made a magazine) beyond their level.” (Elm)

This shows that there had been some engagement in the projects, even though there was no evidence of this in the VLE. This raised questions about how teachers had designed projects where work could take place across geographical boundaries and what cross country collaboration was taking place without using the common VLE platform. The quote is also suggestive of work being done by the students in one school, without communication with other students from across the ELvis cohort of schools.

There were seven codes within the non-engagement category, for example, “Not a lot of interest with the colleagues [in my school]”. However, it is unclear how these codes relate to pedagogic shift, if at all.

A variety of outlier codes were generated as a result of the line-by-line data analysis, which did not easily fit into any of the emerging categories. For example, views were expressed by different people that “ELvis is a fragmented collection of activities” rather than a school with collaborative international projects. Also at all data collection points, the notion of facilitation appeared, with two different participants suggesting that the teachers needed support or facilitation. There were two further comments associated with future possibilities, one about the need to communicate with others in the VLE and one about the need to develop projects. All these outlier comments were suggestive of a journey. However, it was unclear from the data, whether the participants were aware of this and if they were, whether they saw the journey as internal or external to themselves. In other words, was the journey

associated with a change in their individual and collective teaching practices or was it related to achieving the ELvis vision as an external entity to their own being?

In relation to the initial pilot research questions (IPRQ), the following summative findings emerged:

IPRQ. How do teachers engage/learn within ELvis?

A. There is some evidence of teachers engaging with ELvis, but the data analysis is suggestive of this only taking place at face-to-face meetings. Although they are articulating some problems and issues arising from their work, there is little evidence that they are finding solutions to these or learning from them in any other way or engaged in a pedagogic shift. Further research is needed to find out what the barriers are to engagement with pedagogic shift.

IPRQ. How have the emerging technologies been employed to support learning?

A. Although they have set up a VLE, there is little or no activity that can be evidenced that supports learning. Web based communication technologies, such as a VLE are a central component in enabling pedagogic shift to take place and further research is needed to find out why it is not currently being used.

IPRQ. What processes and strategies have needed to be in place for this to happen?

A. The data could not uncover whether there were any processes or strategies in place, however implicit in many of the answers was the need to create processes, although the participants did not seem to know how to do this. The data also pointed to the complexity of pedagogic shift and as part of this, identified the concept of external process or structures being necessary for pedagogic shift to take place. Further data collection may lead to new insights on this complexity.

The implications of these findings for the main study are now discussed.

## **2.6 Implications for the Main Study**

The aim of Cycle I (Pilot Study) was to explore the use and adoption of web based communication technologies as teachers shifted their pedagogies towards teaching in collaboration and integrating technology and also to trial data collection methods and data analysis techniques prior to the main study. In order to address the research focus, a number of research questions were developed for Cycle I (Pilot Study). They were as follows:

- How do teachers engage/learn within ELvis?
- How have the emerging technologies been employed to support learning?
- What processes and strategies have needed to be in place for this to happen?

The Cycle I (Pilot Study) data analysis revealed that many teachers were not using the VLE or any other web based communication technologies and of those who were, they were only just taking the first tentative steps. During the time in which Cycle I (Pilot Study) ran, there was little evidence of teaching or learning and no evidence of pedagogic shift. The data collected and analyzed during Cycle I (Pilot Study), began to reveal some reasons for this.

For example, in a quote from the teacher interviews, a member of staff says “It is very difficult to manage the technical problems during normal lessons”. The issue highlighted here can be described as a ‘technical issue’. Some authors (Muilenburg and Berge, 2005) would support the assertion that technological hurdles are a common problem to those beginning work in online environments. However, some potentially more complex reasons were given, which are more challenging to explain, for example “It was partly difficult to connect the projects into the curriculum”, which could be interpreted in a variety of ways. Perhaps different schools have different curricula or pedagogies, or perhaps it was challenging to match appropriate staff and/or

age groups of children from different schools, or maybe the area of study featured at a different time and place in the academic year in different schools. In this final quote, “It is difficult to get started in a course”, is the teacher simply talking about ‘know how’ and logistics, or is it to do with cultural barriers, language or pedagogical differences between countries? The data gathered did not directly answer these questions because the focus had been to explore the use and adoption of web based communication technologies as teachers shifted their pedagogies towards teaching in collaboration and integrating technology in the virtual international school.

The data analysis did not yield direct answers to the research questions. Rather it indicated that a complex and interrelated set of factors may exist that influence teachers’ ability to engage with pedagogic shift.

### 2.6.1 Emerging Factors Influencing Pedagogic Shift

Out of the data analysis an initial model emerged as demonstrated in Figure 2.2.

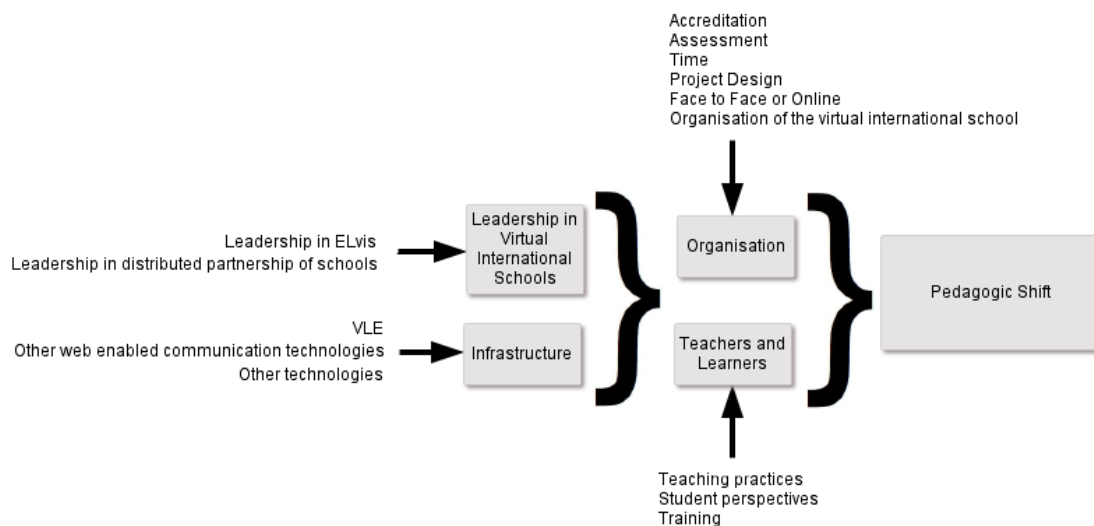


Figure 2.2: Emerging Factors Influencing Pedagogic Shift

## 2.7 Refined Problem Statement

The purpose of ELvis, according to the vision statement was to enable the participating schools, to work innovatively, embracing “new approaches to teaching, learning and assessment” (ELvis website, 2014:online) using web based communication technologies. From initial discussions, the researcher had been led to believe that teachers were carrying out their work in ELvis alongside the work in their own schools, getting their students to engage with other students in ELvis projects as part of their own school based studies. However, the data showed that there was a mismatch between what they said and/or wanted to do and what they were actually doing.

Specifically, the data uncovered that ELvis teachers were at the beginning of a journey towards pedagogic shift. In their *Vision and Key Principles*, as articulated on the website (2014), the ELvis Guiding Coalition had suggested a level of innovation in their use of web based communication technologies. Although teachers had voluntarily come together from the distributed partnership of schools to collaborate in ELvis, they did not appear to be ‘innovators’ (Rogers, 2003). Rather they were on a journey towards innovation. These teachers demonstrated the desire to create new and innovative ways for their students to learn, however, they had not adopted or learned new ways of teaching themselves. In reality, teachers self-selecting themselves to come together with teachers from other schools to collaborate in a new virtual international school, does not necessarily result in innovative practices.

The Cycle I (Pilot Study) gave rise to a variety of further questions. For example: Are there other reasons hindering teachers’ collaboration in the VLE? How can technology be integrated into teaching practices? What are the factors inhibiting technology use? For those who are using the VLE, what has enabled them to do so? What part do cultural / policy differences play in pedagogic shift across geographical boundaries? Are there any change agents? How is the critical friend scaffolding the ELvis teachers? What should teaching practices look like in ELvis? What elements need to be considered in



supporting the use of web based communication technologies in a virtual international school? What impact does the pan European context have upon teachers' ability to collaborate and shift their pedagogies? What elements are vital to the successful creation of virtual international schools? Using these questions as a guide, a focused literature review based on Cycle I (Pilot Study) findings was conducted (see Chapter 3), followed by a refinement of the main research questions, which shaped the rest of this study.

## **2.8 Summary**

The purpose of conducting Cycle I (Pilot Study) was two fold. As well as honing research methods and techniques, Cycle I (Pilot Study) explored the use and adoption of web based communication technologies as teachers shifted their pedagogies towards teaching in collaboration and integrating technology. This chapter has detailed these two purposes before discussing the implications for the main study. The penultimate section of Chapter 2 has looked at how the findings from Cycle I (Pilot Study) have led to a refocusing of the research area.

## **Chapter 3 - Literature Review**

### **3.1 Introduction**

The aim of this research is to explore the concept, with the aim of defining, pedagogic shift in the context of virtual international schools, using such a school that spans five different European countries. To set this specific context in time, this chapter begins with a critical evaluation of the ways teaching has been evolving over the last 100 years, thus framing the landscape in which this doctoral research is located. This chapter then moves to consider the key theoretical strands, which informs this research. In defining pedagogic shift, different conceptions of pedagogy are then explored. The literature review then presents a view of education in the EU before specifically identifying some similarities and differences in the EU school systems participating in this research.

Virtual international schools potentially challenge existing understanding around the construction of the learning space and curricula. This is demonstrated in the next section of the literature review, which examines the history of development of ideas on social constructivism and situational learning. Adult learning is then discussed as the research is concerned with the ability of the teachers to accommodate new practices leading to pedagogic shift. Related to this, is a review of transformative learning theory, which explores what processes need to be in place for learning to lead to a shift in pedagogical approaches. As the context for this research is based in a virtual international school, theories and ideas associated with virtual schools, online learning and blended learning are explored before technology use in teaching and learning and professional cultures are examined. From reading the literature associated with the research, gaps in the knowledge are

identified leading to a penultimate section, which includes the refined research questions, the distinct contribution to knowledge and the intended audience. The literature review concludes with a summary of the chapter.

## **3.2 Framing the Research Landscape**

To set this specific research context in time, this section provides a critical evaluation of the ways teaching and learning have been evolving over the last 100 years. This then frames the landscape in which this thesis is located.

### **3.2.1 A Changing Educational Landscape**

The development of communication through the ages has transformed the way in which we have provided learning opportunities. From primitive man's first attempt at drawing on the cave wall with charcoal, we now find ourselves in a time where people can collaborate synchronously around the world, creating, articulating, refining and publishing new knowledge irrespective of geographical location, cultural/language differences or time zones or of their position in society. In the past, as communication has developed, 'authoritative knowledge' has grown with it, being "socially sanctioned, consequential, [and made] official" (Jordan, 1992:1) by the privileged few through religious orders, societal leaders, universities and printing processes. Concurrent to this, practitioners and craftsmen have developed an oral tradition, which although has been harder to distribute across societies, has also served to educate new generations.

Most education in Western societies currently takes place in physical schools, although some students are home schooled and some are schooled online. The concept of virtual international schooling is relatively new, (see section 3.5). Although the earliest schools can be traced back as far as 1500 - 1000BC (Gillard, 2011), the model of what many of us in the Western world have come to think of as 'school', gained through our own experiences of it, has only been around since the Age of Enlightenment when schools developed outside of church control. At this time, universal education was

introduced across Europe. Alongside this, theories of learning to support such education also grew. Moving away from education that promoted literacy for bible reading and personal salvation (Jarvis, 2001), schools were used as a way of educating our children, to provide a literate workforce for the approaching industrial age and the manufacturing empires of the 18th, 19th and early 20th centuries (Robinson and Wise, 2009) and to a large extent this model of school is little changed (Robinson, 2010). Schools and education systems were thus developed for a certain kind of learning based on knowledge acquisition and acculturation.

Up until the 18th century, society in the UK had changed very little for the previous 100s of years, based on agrarian living and being labour intensive. As Sturdy (1971) suggests, if you transported a man back in time from 1800 to 1500, he would see little change in society, compared to transporting him in the other direction, where society throughout the Western world would have changed beyond recognition as a result of technological advances. Indeed since 1900 to 2000 society in Western Europe has changed phenomenally, as information and communication technologies have become global forces in economic and social change (McNair, 2001), particularly post 1945 as Europe began to recover from two world wars.

However, as early as 1968, Hutchins suggested that systems of education in the UK were archaic and could no longer support the rapidity of change taking place in society. In answer to this problem, he proposed that societies needed to change and that learning was central to this - thus the term 'learning society' emerged. This view was shared by others across Europe (Husen, 1974) and articulated in the 1972 UNESCO report, where the chairman, Edgar Faure writes in his opening letter,

“We should no longer assiduously acquire knowledge once and for all, but learn how to build up a continually evolving body of knowledge all through life—'learn to be.'”

(Faure *et al.*, 1972: vi)

He goes on to suggest that,

“If learning involves all of one's life, in the sense of both time-span and diversity, and all of society, including its social and economic as well as its educational resources, then we must go even further than the necessary overhaul of 'educational systems' until we reach the stage of a learning society.”

(Faure *et al.*, 1972: xxxiii)

Ransom (1998) asks however, is a learning society concerned with developing new ways for individuals to learn, or is the emphasis on how new societies are created? The notion of a learning society is thus discussed by both those who find it useful (e.g. Skilbeck, 2001) and those who find it ambiguous (e.g. Coffield, 2000). Jarvis (2006) suggests that this dichotomy comes from a lack of clear definition. Virtual international schools can provide new ways of learning. However whether they contribute to the notion of a learning society is unclear and will be considered during the course of this thesis.

### **3.2.2 Learning and Educative Purpose**

In creating the term learning society, it can be argued that the focus of learning becomes that of society, rather than of the individual. Indeed many academics and leading thinkers (Bentley, 1999; Guile, 2001; Facer, 2011; Puttnam, 2011; Heppell, 2011) are talking of the centrality of education and learning within society as a whole. In discussing the future of learning, Facer (2011) sees education at the centre of an interplay between the emerging complexity of systems, the growth of a knowledge economy, changing demographics and ongoing climatic disruption. She predicts massive challenges in the 21st century as a result of this interplay and argues that education needs a radical rethink, so that schools may “become a laboratory for building sustainable economic and social futures” (2011:88) and thus address the ensuing developments, problems and changes. A virtual international school may contribute towards such a radical rethink, as potentially it has global reach, spanning different societies, economies and

cultures.

Running parallel to this discourse on educative purpose, a variety of authors (Prensky, 2001; Seely Brown, 2002; Oblinger, 2005; Freison, 2009; Jones *et al.*, 2009) are in agreement that, Western societies have arrived at a renaissance in the way learners learn. This renewed interest in how learners learn, can be seen for example, with the growing interest in neuro-scientific research into the mental processes involved in learning, (The Royal Society, 2011). In exploring the concept of new types of learning, Beckett *et al.*, (2002) have identified two different paradigms, upon which learning is based. They suggest that one is a 'standard paradigm of learning' and is associated with what one thinks of as formal education, i.e. that which takes place in universities or schools, is more traditional in delivery, (in that it is didactic) and has three distinguishing characteristics. Firstly, where the individual learners are like vessels that are being steadily filled with knowledge, secondly where there is an internalization of learning: "a change in the contents of an individual mind" (2002:97) and thirdly, the idea that if something has been learnt, it must be obvious that this is the case, in other words there is some transparency or the learning is somehow explicit. This is a behaviourist approach rooted in the positivist paradigm.

Beckett *et al.*, (2002) go on to suggest another paradigm upon which learning is based and this they term the 'emerging paradigm'. It is emerging because although there are numerous works (Marton *et al.*, 1984; Lave and Wenger, 1991; Eraut 1994, 2000; Fuller *et al.*, 2003; Illeris, 2004) on the early identification of such a paradigm, it is still unclear as to what it actually is. However, in common, the authors listed here suggest it is 'social' in nature and herein belies the difficulty in attaining a coherent and inclusively accepted definition. In other words the variety of work contexts and the nature of the relationships between learners, workplaces and institutions can vary greatly, hindering the universal acceptance of one simple framework. However these authors suggest that there are some common factors associated with this emerging paradigm, that the learning derived from it is fluid and is based on the interactions between various relationships and as the interactions

continue so 'reification' takes place. Thus, it is socially constructed, reflective and is an iterative process. This is a social constructivist viewpoint (see section 3.3) and is relevant to virtual international schools, potentially challenging more traditional understanding around the construction of the learning.

The structures of education systems, pedagogies, content and experiences of learning are shaped by educative purpose. According to Bebell *et al.*, (2012) there are four different lenses through which one can view educative purpose, which is an important consideration to this study, which is concerned with schools from different countries with different cultures and traditions.

The first is an Academic Perspective. Within this, ancient philosophers such as Aristotle, Plato, Mo Tzu and Confucius shared similar views on the purpose of education, although placing different emphasis on it depending on their cultural contexts. To some extent this is mirrored by modern day philosophers such as Habermas, Heidegger and Bourdieu, who all share similarities in their explanations of educative purpose, but who also offer a slightly different perspective. Dewey (1938), believed that the purpose of education was to teach individuals to live purposefully and independently whereas Counts, (1978) suggests that education is more to do with preparing individuals to assimilate into the society in which they live so that they may be active participants.

The second perspective through which to view the purpose of education according to Bebell *et al.*, (2012) is Legislative, which is defined by each country or the counties, states, or other bureaucratic sub-entities within countries, who determine the purpose and / or function of schools.

Within the American system Bebell *et al.*, (2012) propose a third perspective, which is entitled the Legal Perspective, in which they demonstrate how the judiciary has become involved in shaping the education system of the USA. This may or may not be a valid perspective for other countries.

The fourth and final perspective is that of Business. In a 'knowledge economy', businesses (Confederation of British Industry, 2015) view the purpose of education as enabling the development of intangible skills such as teamwork, social skills, critical thinking or integrity for example. In some contexts, businesses directly shape education for example, as they partner universities to create specific corporate degrees, such as those offered jointly by Tesco or MacDonalD's with Manchester Metropolitan University Business School.

These four groups view education through different lenses or from different perspectives. In some countries, all these groups hold power in some form, but with differing emphases and are thus able to shape how learning takes place in schools. Moreover, the teachers who educate the next generation may have been historically enculturated or expected to perform within certain moral and intellectual value systems. Unquestioned, these moral and intellectual value systems may or may not hold currency with teachers' conceptions of pedagogy. As these may vary within and across countries, these conceptions of pedagogy require some exploration in the context of pedagogic shift in an international school.

### **3.2.3 Conceptions of Pedagogy**

Whenever one looks to the future, the person is seeing the distant horizon from another place in time and that place in time can alter one's view of the horizon. The premise upon which this view may be built, needs exploring as our conceptions on both the purpose of education today and in our past will thus shape our future perspectives of why we educate. Moreover, these views may vary between people both within and across national borders, which may affect teachers who have come together in a virtual international school, shifting their pedagogies towards teaching in collaboration and integrating technology. Facer (2012) suggests that there is a dominant myth underpinning the purpose of education in the Western world, with the main aim being to support the economy. However there are broader reasons for educating people, underpinned by alternative perspectives such as in



developing individuals who live beyond their workplace, but within social communities of family, friends, neighbours taking on different roles as child, parent and members of a civil society. The role of education, she argues, is therefore also about “apprenticing novices into the rich histories of knowledge, culture and craft that humanity has developed over centuries and that we seek to pass down the generations” (2012:9). Goodlad (1990) in his investigation of the moral purpose of education suggests four reasons for schooling, including facilitating critical enculturation. Thus rather than education being just related to eventual income generating practices, it can be seen as an enabling process, where learners can not only learn about themselves, but can become part of society and be able to challenge and shape that society.

Jarvis (2001) suggests that learning is now the central semantic of the education agenda across many European countries, which can be seen with the use of terms such as the learning organisation or the knowledge / learning society and in government publications, such as *The learning age: a Renaissance for a new Britain* (DfEE, 1998). However, learning means different things to different people. The neo-liberalists view an “agenda in developing the individualized neoliberal subject” (Davies *et. al.*, 2007:256) still emphasises the need for skills and knowledge acquisition to feed our capitalist societies, made explicit in terms such as the ‘knowledge economy’ (Neef, 1998) and ‘intellectual capital’ (Stewart, 1998). The overemphasis on economies is out of balance with an educative purpose associated with learning about the self. A.S. Neill, a progressive educationalist, suggests that inner contentment is prevented in mainstream education as students are forced to focus on intellectual attainment, rather than personal fulfilment (Hobson, 2001). He asserts that students will only actively engage in learning if they are given the freedom and space in which to do so. Moreover, he suggests that only learning that is undertaken voluntarily is of value.

Although there are critics of his work due to the lack of a coherent epistemology and over simplification of philosophical issues, it has resonance with the work of Heidegger, a leading German philosopher of the 20th

Century, who suggests that learning is participatory and highly demanding and cannot be achieved through a didactic methodology. He comes to this view through an ontological study into the self, where he posits that to varying degrees, humans have an understanding of their individual 'self' and their relationship to place and the choices that need to be made. However the business of life, the need to respond to daily practical concerns, clouds the ability to make coherent sense of 'being' (Bonnett, 2001). In other words, we do not give ourselves the time to reflect and understand the relevance of meanings and how these relate to our existence. This notion of reflection enabling us to come to some understanding of our 'self' has resonance with theories of transformational learning, (see section 3.4).

Heidegger's argument has implications for the way pedagogy is envisioned, raising questions about the relevance of national curricula to personal development and how school structures and processes may or may not enable the individual to explore their own existence in relation to what they learn. To resolve this issue a fundamental change in the student - teacher relationship is required, where the focus needs to shift to the quality of student engagement rather than on specific skills or knowledge acquisition. According to Hawkins *et al.*, (2010) the nature of student - teacher relationships are under-researched in relation to virtual international schooling and will be considered as part of this thesis (see section 7.5.4).

However, Freire argues that education is only ever a political act, involving social relations and political choices (Apple *et al.*, 2001). Freire suggests that central to every educational activity, questions such as 'for whom?', 'to what end?', 'how?', 'why?' and 'what?' have to be asked by educators every time they engage in the act of education and are important guides to the pedagogic practices. This research will look at whether these questions are asked by teachers as they attempt to shift their pedagogies in a virtual international school. If education is a political act, it cannot be a neutral activity, rather it always has a social impact, either enabling transformation in society or maintaining exclusion for example. Habermas, a social theorist and philosopher, goes further, suggesting that in capitalist societies there is an

unequal distribution of power which is maintained by a tacit consent of all those within the society. His critical theory, bound in an educational agenda, aimed to explore this notion through two main methodologies, one which he called Critical Ideology and the second being Action Research. Defining ideology as the values, beliefs and practices which are held and carried out by those who have power in society, he suggested that their ideology is used to promote their interests, through education, sometimes at the expense of other less empowered people within that same society. Winch *et al.*, (1999) suggest that there is a match between educational ideologies and pedagogical approaches, for example, behaviourists tend to use a conditioning approach.

Irrespective of individual ideologies, and whether schools follow a traditional model or are online, successful pedagogical design is evident where there is an alignment between the teaching methods used, the curriculum that is taught, the place of education and the way that outcomes of the educative process are measured, what Biggs *et al.*, (2007) call 'constructive alignment' (2007:50-53) in the context of higher education.

Internationally, there are a variety of learning philosophies and although each can be interpreted in slightly different ways, seven distinct conceptions have emerged from the literature. Each learning philosophy can be seen as a continuum at which the theoretical literature only describes the extremes. Table 3.1 demonstrates how different educative paradigms underpin various educative practices.

	<b>Paradigm</b>	<b>Focus</b>	<b>In other words ...</b>
<b>Pedagogy</b> <sup>[1]</sup>	Teacher Centred	Competence	...imparting knowledge and skills to 'passive' or 'dependant' learners
<b>Didactics</b> <sup>[2]</sup> (Comenius, 1657)	Learner Centred	Self-reflexivity	...learning as a negotiation between the learner and the teacher
<b>Andragogy</b> <sup>[3]</sup> (Knowles, 1970)	Experience Determined	Capability	...teachers helping adults to learn based on the adults' needs
<b>Heutogygy</b> <sup>[4]</sup> (Hase <i>et al.</i> , 2001)	Self-determined	Trouble shooters and problem solvers	...learners themselves determine what and how they need to learn
<b>Ergonagy</b> (Tanaka <i>et al.</i> , 1999)	Occupation - vocational	Education at / through work	...education and training related to preparation for and performance of work, where the learning is continually blended
<b>Ubuntugogy</b> (Bangura, 2005)	Essentialist	Holistic / Integrative	...intellectual growth, constructive thinking, conceptualization and creativity, education for life
<b>Tirbyi</b> (Bangura, 2004)	Teacher / Religious Centred	Tawhid i.e. the overall harmony and patterning of the universe	...giving knowledge to children; developing their skills; teaching at school or colleges through a belief that knowledge is only possible through the guidance of Allah
<b>Technogogy</b> (Idrus, <i>et al.</i> 2006)	Technology focused	Based on enabling technologies	...learning and teaching happen as a result of the use of technologies

Table 3.1: Examples of how different educative paradigms lead to different educative practices (Jones, 2008)

[1] Discussed in this section

[2] Discussed in this section

[3] Discussed in section 3.4

[4] Discussed in section 3.4

The first philosophical tradition in Table 3.1 is Pedagogy, coming from the greek 'pais' and 'agōgos' meaning child-tender. According to Smith (2012) in early times, the Greek pedagogues who were of low status often being slaves, had two roles, firstly to look after their charges and secondly to assist them in learning. This practice was not confined to the Greeks and continued from the 5th Century BC with Romans and Jews also using slaves in this way. However, between the 14th and 17th centuries in Europe, ideas about teaching and instruction began to develop. This resulted in three seminal

works, firstly from Comenius who set out rules for teaching based on an assumption that everybody should be taught in *Didactica Magna* (1657). The second work appeared towards the end of the 18th century, as Kant explored in detail the relationship between teaching and pedagogy in his work entitled *Über Pädagogik* (1803). The third work came from Herbart who wrote several texts outlining the nature of pedagogy, articulating 'educational teaching' and 'educating instruction'.

According to Meyer (2014) the work of Comenius was built upon in German speaking countries by von Humboldt (1768 – 1834) in the formation of a concept known as *Bildung*, which is described as “a process of negotiation of meaning between teacher and the students” (2014, p.6) where teachers are both academic experts as well as moral educators. Meyer suggests that *Bildung* not only explains a process of cognitive learning, but provides a more holistic view of learning incorporating, “social, moral, aesthetic and practical dimensions” (2014, p.6). There are similarities here with transformative learning as put forward by Mezirow (see section 3.4.3).

Discussions in the UK about pedagogy, have in recent times been led by authors such as Alexander Bain and Brian Simon. In particular Simon (1981) argued that 19th century education became governed by policies that sought to contain independent thought rather than enable intellectual growth. According to Pepin (2000) education in the UK context is based on an individualistic and child-centred pedagogical approach.

### **3.3 Social Constructivism and Situational Learning**

Virtual international schools as defined in section 1.2.3, potentially challenge existing understanding around the construction of the learning space and curricula. This section of the literature review therefore examines the history and development of ideas on social constructivism and situational learning.

Up until the 1960s and 1970s, learning was considered as a product or outcome, resulting from a change in behaviour (Smith, 2003). This relates to

the first paradigm as suggested by Beckett *et al.*, (2002) and discussed in section 3.2 of this chapter, where learners are vessels and learning is explicit and internalized. In investigating learning as a product, Säljö (1979) asked a series of questions to adult students about what they think constitutes learning. Their responses fell into five different categories, three of which could be seen as external to the learner - being concerned with 'knowing what', whilst the other two categories could be seen as internal to the learner - being concerned about 'knowing how'. Thus learning can be seen as both product (the thing that has been learnt) and process (the way in which it has been learnt).

This raises questions about pedagogical approaches. In other words, which curricula designs and teaching strategies promote 'knowing what' and which promote 'knowing how'? Jarvis (2001) suggests that traditional education, that concerned with imparting the 'knowing what', required a teacher centred strategy, however we are now moving to a time where a more learner centred approach to learning is required as the focus is on 'knowing how', where prior experience, self-direction and social collaboration play important roles in how learners construct knowledge. Indeed, the emerging paradigm, as articulated by Beckett and Hager (see section 2.2) suggests that learning as a social act, is a central component. It is for this emerging learning paradigm that teachers in virtual international schools need to shift their pedagogies. The theory most commonly associated with social learning is social constructivist learning theory.

### **3.3.1 Social Constructivist Learning**

Central to the definition of pedagogic shift is the concept of social constructivism, (see section 1.2.2). A central figure in the development of social constructivist learning theory, emerging out of the Age of Enlightenment was Lev Vygotsky (1896-1934). Amongst other things, he studied the cognitive development of children, highlighting the importance of both culture and social contexts in cognitive development. In summary, he suggested that rather than learning only taking place first and foremost internally, the process

can begin externally between two or more individuals, before it is then internalized and then externalized in some form. In other words, learning is socially constructed.

Associated with this process of learning, he developed the concept of the Zone of Proximal Development (ZPD). As learning and development are socially embedded, one can only view mental development in relation to the society and cultural context where that development takes place. Specifically, the ZPD is a measurement regarding the cognitive development of a child in respect of what they can do on their own and what they can do with the help of others. For example, when learning how to write, a child can perform the task better if aided by someone else, than if she does it alone. Although Vygotsky defines the ZPD as the gap between the

“...actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers.”

(1978:85-6)

The ZPD has since been interpreted by other authors in different ways. Table 3.2 details how Lave and Wenger (1991) have summarized these differences.

Dates	Authors	Interpretations
1976 1984	Wood, Bruner, Ross Greenfield	<b>First Interpretation:</b> ZPD is the difference between the problem solving abilities of the learner when working alone or when working with others.
1983 1988	Davydov, Markova Hegedaard	<b>Second Interpretation:</b> ZPD is the difference between cultural knowledge gained by either the socio-historical context (usually through teaching) or individuals own experiences.
1981, 1985 1983, 1987	Wertsch (activity theory) Holzkamp (critical psychology)	<b>Third Interpretation:</b> A societal or collectivist perspective where the focus is on the process of social transformation. Engestrom (1987) states that the ZPD is the "...distance between the present everyday actions of the individuals and the historically new form of the societal activity that can be collectively generated" (1987:164)
1986	Garner (critical psychology)	
1987	Engestrom (activity theory)	
1988	Bakhurst (activity theory)	

Table 3.2: An overview of the differing interpretations of the Zone of Proximal Development, derived from Lave and Wenger, (1991:48-49)

The third interpretation, which looks at the relationship between what an individual does and how societal transformation takes place, is of particular relevance in this research, where there is an exploration of transforming pedagogic practices situated in a newly emerging teaching and learning community, as discussed in Chapter 1, section 1.4.

### 3.3.2 Situated Learning

A key learning theory that has been derived from Vygotsky's work and has prominence today is Situated Learning. Lave and Wenger, (1991) note how learning through participation with others in a specific context leads to mastery. From a starting point of apprenticeship, they have developed a social learning theory called 'Situated Learning', defining learners as people who as a matter or course, collaborate in communities of practitioners. Underpinned by the ZPD concept and central to situated learning is the notion of 'legitimate peripheral participation', which describes the activities carried



out by, and the relationship between, newcomers and old timers in the community. Each come with and openly share their own experiences and pre-conceived ideas on how their work, profession, expertise is carried out in practice. This act is described as legitimate peripheral participation, which is seen as “a descriptor of engagement in social practice that entails learning as an integral constituent” (Lave and Wenger, 1991:35). In other words, the reification of concepts takes place as meanings are defined and practices grow and develop through collaboration in their community of practice. This has particular relevance for this research, which is investigating how pedagogic shift occurs amongst teachers in a virtual school community. The teachers from the distributed partnership of schools that make up ELvis, each come with their own conception of pedagogy and as they collaborate together, they must negotiate meanings to create a shared understanding as teaching practices grow and develop through collaboration in their community of practice.

### **3.3.3 Communities of Practice and Communities of Inquiry**

Wenger (1999) defines a community of practice as a place where membership is made up of people who already have some commonality resulting from "shared histories of learning" (1999:86), such as they are all nurses for example or they are all fishermen. Someone can move into a community of practice from outside and as a consequence involve themselves in situated learning, as defined in section 3.3.2. In the case of this research, they are all teachers. The primary focus is their sameness with the obvious ability to learn from each other's practice within their common domain. Moreover, they can collectively change the nature of their common domain through their participation with each other, which is of importance in looking at pedagogic shift, as this research is. He states that:

“Participation refers to the process of taking part and also to the relations with others to reflect this process. It suggests both action and connection.”

(1999:55)

Drawing on his earlier work with Lave (1991), Wenger suggests that in communities of practice, the participants learn from each other by negotiating meanings to refine shared practices in communities where they are co-located, whether this be a family group or a team of accounts clerks. He suggests that it is a complex process, combining various actions and involving the whole being, involving both knowing what, explicit knowledge and knowing how, knowledge derived from active participation in the world. Although his definition does not proceed to the online world, there is some resonance with his work and the concepts that underpin some online learning communities and virtual international schools, (see section 3.5).

Communities of inquiry have been discussed by a variety of authors (Lushyn and Kennedy 2000, Slye and Williamson 2003; Garrison, Kanuka and Hawes 2004). Their explicit focus is based in learning and although this is also present in communities of practice, it is more implicit in the latter. In other words, in a community of inquiry it is an expectation of participants that learning will take place. Lipman (1991) does not see inquiry as separate from community and he sees all communities of inquiry as the methodology for the teaching of critical thinking. This is a fundamental difference with communities of practice, where learning is not necessarily the chief goal. This primary focus of learning in communities of inquiry is all that gives the participants their sameness. The context or domain in which they then apply this learning might be different (e.g. in Ultraversity, see section 1.6.2). Thus the collaborative learning, whilst helping to develop the individuals within their separate domains, does not necessarily impact or change the practice of the larger working domains of each individual participant, as they may come from different working domains. Along with this key difference, communities of inquiry may not be pre-existing and therefore the sense of community needs to be induced through the application of facilitative skills. Virtual international schools are a new phenomenon and as such the way they are set up and how a sense of community is built, needs to be considered in any model, which leads to pedagogic shift.

Whether one is located in a community of practice or a community of inquiry,

it is recognised (Vaughan *et al.*, 2006; Ley *et al.*, 2012) that even the most self-directed and focused learners, be they teachers or students, need some sort of guide or scaffolding. This is important for those involved in pedagogic shift in virtual international schools, where they are changing practices whilst learning about new forms of schooling. Teachers in these settings may need help from knowledgeable others (Vygotsky, 1930/1978) who can aid them in pedagogic shift.

### **3.3.4 Scaffolding**

After Bruner coined the phrase in 1967, Wood, Bruner and Ross (1976) developed Scaffolding Theory in their work on the role of tutoring in problem solving with young children, although it heavily draws upon the earlier work of Vygotsky, particularly in his work on the Zone of Proximal Development. At its simplest, scaffolding refers to the process of enabling others to learn for themselves by providing a framework which both supports learners and leads learners to become autonomous learners. Autonomy is reached as learners develop over time and as the support structures are taken away. In exploring pedagogic shift, this thesis will look at if and how scaffolding has taken place and who the scaffolders have been as teachers change current isolated teaching practices to teaching in collaboration with others through the integration of web based communication technologies into those practices (see section 7.7.4). Pass (2004) describes scaffolding as the way a learner is brought through stages of development by a caring “social other”, noting the similarities between this and Piaget’s concept of ‘optimal mismatch’, where a child is presented with a challenge at the end of their current developmental reach.

Scaffolding is needed where tasks,

“...are initially beyond the learner’s capacity, thus permitting him to concentrate upon and complete only those elements that are within his range of competence.”

(Wood *et al.*, 1976:90)

Wood *et al.*, (1976) identify several processes at work in scaffolding. The first is 'recruitment' or engaging the learner in the learning task. The second is 'reduction of the degrees of freedom', by which they mean, the simplification of the task. Then follows 'direction maintenance', keeping the learners focused; 'marking critical features', highlighting important aspects of the task; 'frustration control', maintaining a balance between too little support and over dependency on the tutor, and finally 'demonstration', otherwise referred to as 'modelling, where the tutor performs or models an outcome or process (*ibid.*).

This definition of scaffolding was derived from a study which looked at problem solving tasks in three to five year olds, however the term is now widely used with all ages of learners. Bruner (1986) describes scaffolding as a "vicarious consciousness" (1986:72), by which he means a transient intellectual help, provided by a tutor who engages with a learner to help them move through deeper levels of understanding.

### **3.3.5 Facilitators and Change Agents**

In exploring whether 'scaffolders' are present or necessary in virtual international school, this section discusses the variety of terms used to describe the role and the subtle differences that this might have in the context of pedagogic shift. For example, scaffolders can be seen as a teachers, coaches, mentors, facilitators, moderators, tutors, mediators, guides etc. In different situations and with different groups of people, one term might appear more valid than another, however, this can be subjective, shaped by historical, cultural and sometimes habitual reasons. In adult learning, particularly in online communities of practice, the word 'facilitator' is often used as it implies enablement, rather than expertise or hierarchy at its core (Jones and Terrell, 2004).

The art of facilitation is becoming more widely recognised as one of the primary factors required for the success of online communities, (Rheingold, 1998; Chapman and Ramondt, 1998; Salmon, 2000 and ULTRALAB, 2002). Facilitation, as a concept in group learning was made prominent by Carl

Rogers in the early 1960s, who formulated three qualities of a successful facilitator, these being realness or genuineness, empathy and respect or prizing the learners in the group. This was born out of his work in psychology, where he demonstrated the importance of individualization, a concept mirrored in the work of Neill and progressive education (see section 3.2.3). Since then, numerous writers (Salmon, 2000; White, 2001 and ULTRALAB, 2002) have attempted to clarify the raft of skills, which are required in varying quantities and at various times throughout the lifecycle of an online community.

In the *Talking Heads Project* (see section 1.6), a model of facilitation was developed (2001) based on the work of Berge (2000). He identified four areas of facilitation: pedagogical, social, managerial, and technical, for application in a computer conferencing environment with online instructors. Within this context, the purpose for engagement was formal learning, however not all communities are associated with formal learning. For example, in *Talking Heads* the community purpose was to enable less structured learning and informal support mechanisms. In order to draw out the less structured knowledge, making the tacit, explicit, requires different skills to those required in more traditional learning settings. Thus the ULTRALAB team built upon the original work by Berge, creating a five-part model of online facilitation with the component parts being learning, community, administration, support and research (ULTRALAB, 2002). Such distinctions may apply to facilitation in virtual international schools as teachers are scaffolded through a process of pedagogic shift.

Following the *Talking Heads* research, an analysis of online facilitation was set out in Jones *et al.*, (2004), who suggest that to maintain online communities, “a fluid range of skills, styles and repertoires of appropriate approaches” (2004:4) is required by facilitators, along with a careful balance between intellectually and socially crafted dialogue. In the context of a newly created virtual international school, the notion of facilitator can be seen as someone who scaffolds participants through a process of pedagogic shift.

In other work (Fullan, 2000; Rogers, 2003) scaffolding has been described as change agency. There are some similarities between change agents and facilitators. A change agent can be seen as someone who acts as a catalyst for introducing new practices, ideas or processes into a certain context. They are the link person between the innovation and the community. Fullan (2000) suggests that it requires self-consciousness and articulates four key dispositions - personal vision-building, inquiry, mastery and collaboration. In Rogers (2003) work on the Diffusion of Innovation, change agents are described as those people who influence innovation decisions, steering the 'clients' towards the adoption of desirable innovations and practices by either slowing down or speeding up processes accordingly. Like a facilitator, they are perceived as being on the edge of the system or community. Often they will draw upon 'opinion leaders' from within the community to enable them to carry out their influence on change. Opinion leaders are people within a community or group who can have either a positive or negative effect on change. It is an informal form of leadership, which may be overt or covert.

However, Fullan (2000) suggests that, "people must behave their way into new ideas and skills, not just think their way into them" (2000:15). The data from Cycle I (Pilot Study) suggests that currently the teachers are not changing their teaching practices in this way. Instead the teachers appear to be on a journey towards behaving 'their way into new ideas and skills'. They are only just beginning to see that enabling students to learn in new ways with technologies, the goal of pedagogic shift (see section 1.2.2), means they must develop and change their own practices, or put another way engage in pedagogic shift. From the data so far, they do not appear to know how to change nor are they able to envision what change might look like. Thus an external change agent may be required to help them in critical reflection and raising their self-consciousness.

### **3.3.6 Reflective Practice**

As discussed at the end of the last section, critical reflective practice may be required to enable teachers to make a pedagogic shift. The concept of

reflective practice was first discussed in detail by Donald Schön in his book 'The Reflective Practitioner' (1983), where he builds upon Dewey's theory of inquiry (1938). Dewey describes reflection as the

“...active persistent and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusion to which it tends.”

(1938:9)

It can be seen therefore as both an active process and directly linked with learning. Reflection is also a key part of transformational change theory (see section 3.4), which has implications for pedagogic shift. Gibbs (1998) supports the idea of reflection as an active process within learning, asserting that:

“It is not sufficient simply to have an experience in order to learn. Without reflecting upon this experience it may quickly be forgotten, or its learning potential lost. It is from the feelings and thoughts emerging from this reflection that generalisations or concepts can be generated. And it is generalisations that allow new situations to be tackled effectively.”

(1988:9)

Schön (1983) identifies two different types of reflection: 'reflection-in-action' and 'reflection-on-action'. The former is often referred to as 'thinking on your feet' and describes an evaluation of an experience or event as the experience or event is happening. Reflection-on-action, is how a person thinks about an experience or event, after it has taken place and requires an individual to actively create space in which to reflect. Moon (1999) suggests that this kind of reflection is

“... a form of mental processing with a purpose and/or anticipated outcome that is applied to relatively complex or unstructured ideas for which there is not an obvious solution.”

(1999:23)

Brookfield (2004) emphasizes the necessity for teachers to think about events critically through reflective practice, either in groups or as critical self-reflection. However for reflective practice to be an effective tool for learning,

teachers require a framework or model, which leads them through a process of a critical reflection of an experience or event (Jones and Younie, 2014). Experiences or events viewed within a model are often referred to as 'critical incidents'. Tripp (1993) suggests that "critical incidents are produced by the way we look at a situation: a critical incident is an interpretation of the significance of an event" (1993:8). In other words, critical incidents can be viewed as situations or events that stand out in some way, whether they be negative or positive. There are a variety of reflective models (Burton, 1970; Kolb, 1984; Boud, 1985; Gibbs, 1988; in Jones and Younie, 2014) through which critical incidents may be viewed. In common, they all have several steps to follow which are associated with first describing what happened and then thinking about what you have learned from that and finally articulating what, if anything, you might do differently next time. However, these tasks may not be enough to identify or challenge any underlying assumptions.

Schön and Argyris (1974) discuss the notion of 'underlying assumptions' in their work on 'single loop' learning and 'double loop' learning. They suggest that people act in a certain way as a result of mental maps and that these maps are shaped by three different elements: governing variables, action strategies and consequences. When an action does play out effectively or as anticipated the person tries to identify the mistake and then put it right by choosing an alternative action strategy. This results in what they refer to as single loop learning. However, sometimes it is necessary to reflect beyond the action strategy and to critically examine the governing variables, which inform the action strategies. Learning which results from this course of action, they term 'double loop' learning. Reflection on critical incidents leading to double loop learning can therefore enable reflection beyond the superficial and potentially enable pedagogic shift to occur.

### **3.4 Adult Learning and Learning to Change**

So far, this literature review has discussed learning in general terms. However, teachers are adults and as such, it is important to review literature associated with how adults learn so that they might adopt new teaching



practices as part of pedagogic shift. The foundational theory underpinning much of what happens in adult education today comes from Malcolm Knowles (Cranton, 2006). In his work on Andragogy, first put forward in Europe by a German named Alexander Kapp (1833), Knowles (1984) emphasized that adults are self-directed learners who need to take responsibility and make their own decisions. For learning to be successful, he suggests the following directives:

- Learning is based on problem solving, not assimilating content
- Learning needs to be negotiated with learners
- Learning should be of value to their immediate context
- Learning is experiential

Although there are critics of his work (Griffin, 1991; Welton, 1993 and Pratt, 1993), mainly due to the lack of empirical evidence, his notion of Androgogy is widely cited in adult education literature. Knowles' emphasis on self-direction is extended by Hase *et al.*, (2000) in their work on Heutogogy - an holistic approach to learning - who suggest that it is the learner who should decide upon the direction of their learning themselves. Heutogogy, which builds on humanistic theory, is thus described as self-determined, rather than self-directed, with a shift in the relationship between the teacher and student. Heutogogy also combines ideas from other prominent academics such as Emery and Trist, (1965) who discuss the relationship between organization change and the environment, Stephenson, (1993) who expounds on independent capabilities (see section 3.5.2) and Argyris and Schön, (1996) who theorize on single and double loop learning (see section 3.3.6). Although the concept of Heutogogy is still in it's infancy, it has resonance with the concept of 'inner contentment', presented by Neill (see section 3.2.3). In addition, Heutogogy has been successfully applied in work-based situations (Blaschke, 2012), which may be useful for teachers who are learning how to shift their pedagogies in virtual international schools.

Many of the ideas present in adult learning theories, build on the work of Dewey in his book, *Experience and Education* (1938) who believed that

learning should be experiential and related to practice (Cranton, 2006). In other words, learning should result from the process of critical reflection or critical self-reflection to make sense of experiences or practices, articulating new meanings as a result. Critical reflection or critical self-reflection (section 3.3.6) would seem to be key to transformational change, which may lead to pedagogic shift.

The main body of work from which modern day discussions around experiential learning are set, comes from Kolb and Fry (Smith 2001). In articulating his arguments, Kolb (1984) in particular draws upon the key elements in the works of Piaget, from the field of developmental psychology, Dewey and his work on inquiry and adult learning and Lewin in the field of social psychology. Central to the process of experiential learning is 'experience'. At its simplest, experiential learning can be seen to link learning in the workplace, learning in more formal places of education and learning that takes place as part of someone's personal development. Chickering, (1977, cited in Kolb, 1984) states that experiential learning "can contribute to more complex kinds of intellectual development and to more pervasive dimensions of human development required for effective citizenship" (1984:7).

Experiential learning is not without its critics, with some seeing it as: "more concerned with technique and process than content and substance" (Kolb, 1984:3). However, Kolb uses his book as a way of responding to the issues raised by such critics, arguing that his account of experiential learning offers a new theory of learning which provides a foundation for a new pedagogy that enables lifelong learning, thus suitable for the changing landscapes in our emerging global society in which adults are inevitably still learning.

Experiential learning is underpinned by an assumption that adults need to be both problem solvers in the learning process and relate their learning to their contexts, workplace or social lives (Cranton, 2006). Thus it has direct relevance to teachers engaging in pedagogic shift as they problem solve, negotiating meanings and redefine their conceptions of pedagogy, collaboratively in the new work context of a virtual international school.

Cranton (2006) proposes adult learning as a distinct process and suggests six key facets of adult learning, these being:

1. Collaborative participation
2. Practical / experiential learning
3. Self-directed
4. Experiences/resources adults bring to learning
5. Self-concept (can hinder or promote learning)
6. Learning styles

(2006:6)

Collaborative participation, particularly in informal or non-formal settings she suggests, is where adults work in groups, interacting with each other. Unlike children, adults bring rich histories of experiences with them, thus they are able to co-construct new knowledge together in a more self-directed manner. In a more formal setting, the introduction of a facilitator who is often positioned as a co-learner, can aid in the self-directed learning process. In relation to self-concept, Cranton (2006) goes on to explain that if it is low, it can act as a barrier to learning. She argues that a goal of adult learning is the development of a more positive self-concept. Lastly she discusses the notion of learning styles. Cassidy (2004) suggests that over the last four or five decades since studies have been directed on learning styles, there have been a raft of definitions, however fundamental to all is the notion that the way learners approach or choose to learn has an impact on the process of learning and the attainment of learning outcomes.

Together, Cranton (2006) argues that these six facets of adult learning have relevance to transformative learning. They are a complex mix with some concepts interwoven, such as self-direction, collaboration and self-concept. Thus, transformative learning or change takes place where we can make sense of prior experiences through questioning the beliefs and assumptions we have held historically, which may be relevant to the concept of pedagogic shift, as defined in section 1.2.2.

### **3.4.1 Adult Learning, Leading to Pedagogic Shift**

As change is a component of pedagogic shift, as defined in Chapter 1, section 1.2.2, this section will look at theories of change. Although there are a wide variety of theories on change (Kritsonis, 2004; Illeris 2007), it is commonly seen that reflective practice (see section 3.3.6), is a central element (Cranton, 2006; Mezirow, 2009; Illeris, 2007). Lewin (1951), who was concerned with conflict resolution through behavioural change, created an organisational theory of change which identifies three steps in the process, these being 'unfreeze', 'movement' and 'refreeze', where change is negotiated through an understanding and manipulation of the driving and restraining forces associated with the anticipated change. This model has been criticized widely (Burnes, 2004), for not being useful beyond the small scale, for ignoring the politics and power struggles in groups and not taking account of the instability of organisations. However, Lewin had not intended for it to be taken separately from his other contributions in Field Theory, Group Dynamics and Action Research.

In isolation, the three step model was extended by Lippitt, Watson, and Westley (1958) to incorporate a further four steps where the focus is more on the change agent than the forces at play. More recently, Prochaska and DiClemente (1992) developed a spiral model of change within the context of medicine. For the purpose of this research, which is about pedagogic shift in a virtual international school, attention is specifically focused on those theories, which are associated with change in education, explicitly those, which are transformative in nature. Such theories are relevant to pedagogic shift (defined in section 1.2.2), where change may or may not be transformational in nature.

### **3.4.2 Learning to Change**

For teachers to engage in pedagogic shift, they need to learn to change as they move from current isolated teaching practices to teaching in collaboration with others through the integration of web based communication technologies

into those practices. As a background to 'learning to change', Jean Piaget, a Swiss philosopher and psychologist carried out considerable research into how people learn. In particular he makes a distinction between the dynamics of learning (the drivers, which motivate someone to learn) and the structures of learning (the content of learning). His research was largely concerned with the structures, in which he suggests that for people to make sense of and be able to retrieve knowledge gained through learning, that there needs to be a structure making process (Illeris, 2007). There is resonance here with literature associated with reflective practice (see section 3.3.6).

Summarizing this, Illeris (2007) notes four different types of learning - these being cumulative, assimilative, accommodative and transformative. Cumulative learning is largely associated with the work of Danish psychologist Thomas Nissen and describes learning, which takes place when learners have no prior mental schemes through which they can make sense of new learning, thus is usually associated with early learners. Assimilative learning and accommodative learning are derived from Piaget. Assimilative learning, Piaget suggests, describes the way in which new experiences are shaped so that they conform to existing conceptual schemes and structures. He uses the term accommodative learning, to describe the way knowledge structures themselves change as a result of learning from new experiences. Accommodative learning, it can be argued it therefore central to the concern of this research, which looks at pedagogic shift.

Illeris points out that accommodative learning presupposes,

“...that relevant schemes that can be reconstructed are already in place ... that the individual needs or is keen to mobilize energy for a reconstruction ... that the individual in that situation perceives sufficient permissiveness and safety to 'dare' to let go of the knowledge already established.”

(2007:44)

The context of virtual international schools may be such, that teachers from distributed partnership of schools feel able to set aside previously held conceptions of pedagogy so as to make a shift in their teaching practices.

Illeris (2007) adds that accommodative learning is necessarily harder than assimilative learning as it asks the learner to 'let go' of formerly held mental schemes and structures. He suggests that transformative learning moves to an even higher level and is concerned with learning that occurs when a large number of mental schemes are reorganised at the same time so that significant learning leading to a change, takes place. For some teachers who are exploring pedagogic shift in a virtual international school, the change from current isolated teaching practices to teaching in collaboration with others through the integration of web based communication technologies into those practices may be great. This may result in the need for a large number of mental schemes to be reorganised at the same time, for such a change to occur.

### **3.4.3 Transformative Learning in Adults**

An understanding of transformative learning theory in the context of this research helps to shed light on the process of shifting pedagogical approaches. Transformative learning has its roots in psychotherapy and can be traced back to the work by Joseph Breuer on catharsis (Illeris, 2007). However, it was Carl Rogers (1951), from the field of humanistic psychology, who related transformation to the concept of learning. In particular his work led him to develop the notion of significant learning, where "experience which, if assimilated, would involve a change in the organization of the self" (1951:390), in other words, a reorganisation of a large number of mental schemes.

Since this time, a variety of theoretical viewpoints on transformative learning have developed, the first of which, was launched by Jack Mezirow (Illeris, 2009). Mezirow (2000) suggests that there are six habits of mind, which he defines as being broad dispositions, which enable us to interpret our experiences and the society in which we live. They include epistemic, sociolinguistic, psychological, moral-ethical, philosophical and aesthetic. These habits of mind are represented as points of view, or 'meaning schemes' through which we interpret our experiences and are summarized in Table 3.3.

<b>Habits of Mind</b>	<b>Explanation</b>
Epistemic or learning style	This refers to knowledge (how we acquire and use it) and learning (both styles and preferences)
Sociolinguistic	These are based in the way we use language to develop our social norms and our cultural expectations.
Psychological	This relates to the way we see ourselves including our personality traits, such as we are introvert or extrovert, our needs and self-image and what filters we use to view the world.
Moral-ethical	This consists of our view on morality and the use of our self-conscience and how we act accordingly to these viewpoints. In using this habit of mind, people are able to detach themselves from ideological viewpoints to look at what is ethical and moral.
Philosophical	These are formed through religion, philosophy and transcendental world views, all of which provide a complex web. These habits may be consciously subscribed to or assimilated through family, religious establishments or society.
Aesthetic	These refer to our tastes, values, attitudes all of which are often shaped by the culture and social norms held by the communities in which we live.

Table 3.3: A summary of Mezirow's updated Habits of Mind (adapted from Mezirow, 2009:93)

Each of these habits of mind can be viewed on their own, however they form a complex mix in transformative learning and therefore should also be viewed from an interrelated perspective as each one can influence the others.

Mezirow's view is in line with others such as Piaget, Nissen and Illeris, in that we organize what we learn into meaning schemes and meaning perspectives, which, Mezirow argues, both constitute our frames of reference for how we build meaning. Frames of reference can most readily be described as mindsets, points of view or habits of mind, formed and bound by language and culture, which in turn create the structures through which we make sense of experiences and the world. Most of these frames of reference are developed through childhood as we are enculturated into and by the society and communities in which we live. In a group of teachers who come from different cultural societies and communities to engage in pedagogic shift, the individuals' frames of references may vary and this might impact on how they

learn to change their teaching practices collaboratively.

Transformative learning occurs when we transform problematic frames of reference so that we become “more inclusive, discriminating, open, reflective and emotionally able to change” (Mezirow, 2009:92). However this is not an easy process, as a person has to be open to change. Cranton (2006) points out that habits of mind can be deeply held, for example, that we no longer question whether we should use money for the exchange of goods and services, that we should have a health or education service, all of which are ingrained into our unconscious minds through the society in which we live, what Habermas refers to as world systems (Cranton, 2006). These world systems are no longer questioned or even perceived as questionable. The conceptions of pedagogy that inform teaching practices may also be unquestioned by those in virtual international schools, thus inhibiting the ability to engage in pedagogic shift.

Habermas (1972) suggested a framework to help people question underlying world systems, which he called an ‘ideological critique’, where members of the society can explore the actions of ideology. Habermas’s four stage model for carrying out ideological critique, includes description or interpretation of the existing situation; why it is thus - deep penetration of the context and situation; agenda setting to alter the situation; evaluation of this new situation in practice (1972:230).

The second stage requires a deep immersion into the conditions, factors, causes and purposes of the situation to uncover the underlying values, beliefs and attitudes. Habermas notes the importance of an action research approach, specifically honed to look at transformational change. Indeed he suggests that action research is empowering and emancipatory, giving practitioners a voice. However, conversely, he suggests that action research is powerless in the face of mandatory educational changes brought about by those who hold the power in society. This has resonance with the findings from Cycle I (Pilot Study), which suggested that other processes or structures, which are external to the teachers’ locus of control, might influence the ability



of teachers to engage in pedagogic shift.

Building on the work of Habermas, Mezirow's (2009) theory of transformative learning is derived out of a study he carried out in 1978 regarding adult women returning to a community college after a gap in their education. He found that the transformative process itself contained ten phases of learning, which may have relevance in pedagogic shift for teachers. These phases include:

1. A distorting dilemma
2. Self-examination
3. A critical assessment of assumptions
4. Recognition of a connection between one's discontent and the process of transformation
5. Exploration of options for new roles, relationships and action
6. Planning a course of action
7. Acquiring knowledge and skills for implementing one's plan
8. Provisional trying of new roles
9. Building competence and self-confidence in new roles and relationships
10. A reintegration into one's life on the basis of the conditions dictated by one's new perspective

(2009:19)

The first seven of these steps can be seen as planning stages and it is not until stage eight that any new actions are trialled. Within the planning phases, it has been made explicit by some authors (Mezirow, 2003; Cranton, 2006), that both critical reflection and dialogue with others is central. Indeed, transformative learning is based on a social constructivist perspective, with discourse being a central component. To this extent, there are similarities with the concept of pedagogic shift, as defined in section 1.2.2 of Chapter 1, which is also reliant on discourse underpinned by a social constructivist paradigm.

Mezirow's habits of mind can be contrasted with the work of Dirkx (2000), who incorporates the role of imagination, emotion and spirituality in transformative learning. This is particularly relevant in fostering transformative learning in an online context (Dirkx *et al.*, 2009), such as a virtual international school.

There are similarities with Mezirow's definition of transformative learning and that of Cranton, (2006) who believes it is still a theory in development. Cranton (2006) defines transformational learning as a theory which attempts to understand the "process by which previously uncritically assimilated assumptions, beliefs, values, and perspectives are questioned and thereby become more open, permeable, and better justified" (2006:vi). She suggests that transformative learning theory has changed the direction of adult education practices. However, she adds that there are few resources available to foster transformative learning. In support of Mezirow, she says that transformative learning involves critical self-reflection, which has to be voluntary as once self-reflection is mandated it becomes indoctrination, which cannot therefore be transformative. Thus, Cranton argues, if transformative learning is voluntary, then to some extent it has to be self-directed, to allow a person to critically reflect on their beliefs and assumptions. Self-direction and transformative learning are thus interwoven, as a person re-examines their self-concept and change their habits of mind.

Although Cranton supports Mezirow's framework, she does not see it necessarily as a linear process, thus simplifying it into the following overlapping four phase model, which an educator can use to aid others in transformative learning:

- Empowerment
- Disorienting Event
- Questioning Assumptions and Perspectives
- Discourse, Dialogue and Support

(2006:59-66)

She asserts that people can move between these processes, miss out parts and repeat phases where necessary. Empowerment can be seen as both a goal and a condition of transformative learning, where a learner is able to participate in learning through reflection and discourse without hinderance, putting into practice new ideas or actions as a result. The second phase is associated with a disorienting event, also a key stage in Mezirow's model. Brookfield (1991) describes this as where "an unexpected event leads to

discomfort or perplexity”. There are similarities between this and critical incidents (see section 3.3.6). A disorienting event is used as a stimulus, which may provoke one into a critically reflective process. However, people can react differently to disorienting events, which may lead to different responses and not necessarily to transformational change in everyone. Cranton cites several reasons for these different reactions, for example, “the content of the event, the circumstances under which the event is encountered, and the place where a person is in life” (2006:61). She adds that differences may also be associated with personality types. In other words, some personality types are more open to reflection, alternative opinions and changing perspectives than others. These differences may affect the ability of teachers to engage in pedagogic shift, which is transformative and will be discussed in relation to the findings in Chapter 7.

Cranton goes on to suggest that the questioning of assumptions and perspectives is where critical reflection and critical self-reflection takes place. It is where participants become more fully aware of either underlying assumptions or the possibility of alternative viewpoints. Discourse, dialogue and support is the process that helps participants in the process of critical reflection and critical self-reflection (see section 3.3.6). This is relevant to the definition of pedagogic shift, used in this thesis, where teachers engage with each other to change their teaching practices.

Initially, research into transformational learning has been associated with how people plan and implement new perspectives, having already challenged their assumptions. However, according to Cranton (2006), the field of transformational learning is beginning to focus on disorienting events and the process of critical questioning, discourse, dialogue and support. These processes are relevant to pedagogic shift in the context of a virtual international school context, where different conceptions and assumptions of pedagogy might be held by the various teachers.

This four phase model provides a useful analytical framework to explore how teachers are engaging in pedagogical shift, specifically in relation to whether

any change might be defined as transformational, which may or may not be a part of pedagogic shift as defined in section 1.2.2 in Chapter 1. It is one of the most recent transformational learning models, having being articulated in 2006. It takes into account theoretical perspectives from a wide variety of key authors on transformative learning and critical thinking.

In looking at shifting pedagogies, Cranton's model of transformative learning forms a useful framework for exploring pedagogic shift in the context of virtual international schools.

### **3.4.4 Learning as a Group**

In an emerging virtual international school context, theories of learning as a group can help to make sense of how the team is learning together. Literature surrounding learning in groups has been available for many years. Some theories have been specifically associated with transformational change, such as Action Learning, Collaborative Inquiry and Group Learning. However, groups learning as an entity is relatively new (Cranton, 2006).

Alcantara *et al.*, (2009,) suggest that Collaborative Inquiry and Transformational Learning are aligned on three different levels. Firstly, in the creation of a social space where group members can engage effectively with each other; secondly by following an holistic framework; thirdly by enabling critically reflective discourse around personal belief and assumptions. A central aspect of collaborative inquiry is group development (Nelson *et al.*, 2008) yet this is only just emerging as a concept in transformative learning, mainly explored by authors such as Kasl *et al.*, (1997) and Yorks *et al.*, (2000).

There are similarities between the process of Collaborative Inquiry and Action Learning in that they both follow cycles of reflection and action to aid a group to problem solve. Although there are different schools of thought (Scientific, Experiential, Critical Reflection) proposing various definitions of Action Learning, there are some common features as follows: Action Learning is

where peers come together on an equal footing to explore a real problem or issue which may or may not have clear answers or solutions (Marsick *et al.*, 1999). In work on 'group learning', Kasl *et al.*, (2000) suggest that groups have the capacity to learn and base this belief on two assumptions. Firstly that a group contains some common characteristics and secondly that there is a group mind. If both these are true, they argue, then just as an individual can learn and transform, so can a group.

The nature of learning in groups changes as groups form and continue to evolve. According to Miller, (2003) Tuckman's model of small group development (1965 and revised with co-author Jensen in 1977) is the most often cited reference to group development, focusing on five stages, these being forming, storming, norming, performing and adjourning. Within these stages he focused on two different elements of development: interpersonal related and task related. Although Tuckman's model is not specifically associated with transformational change, understanding where a group is located in their formation, might inform that group of their receptivity to learning that is transformative, enabling pedagogic shift.

### **3.5 Teaching in Virtual Schools**

In this thesis, pedagogic shift is being explored in the context of virtual international schools. In taking a view on how teaching takes place in virtual schools a brief overview of the history and context of virtual schools in education systems is now discussed, followed by an overview of teaching online and blended or hybrid teaching.

#### **3.5.1 The Context of Virtual Schools in Education Systems**

This research is based in the context of a virtual international school. There is little research specifically on virtual international schools. Rather most of the literature is about virtual schools, of which some are international. Virtual schools have emerged out of the end of the 20th Century (Russell, 2004) particularly in the USA, where the numbers have been growing rapidly in

recent years as a result of globalization, technological advances, changing perceptions on the traditional model of schooling and new funding models (Clarke *et al.*, 2005).

In Europe, a major study (A Transnational Appraisal of Virtual School and College Provision - *VISCED*) was funded by the European Union to provide a systematic review of virtual schools and colleges across Europe. As part of the project, *VISCED* identified different levels in which virtual schools and colleges could be categorized. In particular, they suggest that the main reason for the growth in virtual schooling across Europe is to provide inclusive education, education for expatriates or for disengaged learners. They define a virtual school as:

“...a school where pupils learn mainly at a distance over the Internet and any activity in a classroom takes no more than around 15% of study time (1 day per week in a fulltime school). The pupils will normally be based at home (and in special cases, in hospital, in the workplace, travelling or in a custodial institution) but in some cases they may be at a physical school – just not the school at which they study.”

(*VISCED* Final Report, 2013:6)

This definition focuses on location, rather than on the types of learning that take place. Nor is there any consideration on the type of teaching practices that occur in virtual schools.

In Clarke’s (2001) discussion of the different components, which are important in the formation and running of a virtual school, location is not mentioned.

Rather the eight components are based on an organisational viewpoint, some of which could be seen as pedagogical:

“Curriculum, technology, funding, teaching, student services, assessment, policy administration, marketing and public relations.”  
(2001:201-4)

The USA National Education Association (NEA) has a similar list of seven key components, where the focus appears directly related to pedagogy:

“Curriculum, instructional design, teacher quality, student roles, assessment, management and support, technological infrastructure.”  
(2002:11)

According to Russell (2004), in spite of the rise in number, there has been little evaluation associated with virtual schools. Although there are different definitions, virtual schools appear to share some common characteristics:

- They are a type of distance education
- Teachers and learners tend to be distributed rather than co-located
- Instruction is mediated
- It involves some sort of online or eLearning

The differences in virtual school definitions however, appear to be greater than these similarities. For example, a 2012 *Ofsted Report* looking into the impact of virtual schools in the UK, could not find a consistent model across the nine authorities where inspections took place. This is suggestive of an emerging area, which needs further research. Russell (2004) also suggests that there are a number of variants of virtual schools, for example, not all use asynchronous communication methods, indeed in some there is a small amount of face-to-face time between teacher and learner. The characteristics of virtual schools, Russell argues are better understood if examined in light of the governing organisation. Drawing on the earlier work of Clarke (2001), he identifies seven different types of virtual school:

- Virtual schools made up of a consortium
- Virtual schools operated by districts or schools
- Virtual charter schools
- University based virtual schools
- Private virtual schools
- Related for-profit providers of curricula and content
- State sanctioned virtual schools

(2004:4)

Within these categories, there is no specific mention of an international partnership of distributed schools. Moreover, from reading these definitions, there appears to be a set of assumptions made about school processes. For

example that most of the teaching and learning is distributed or online and that learners are following national or locally established curricula.

Freedman (2005) suggests that collecting data, which can then be analysed to determine whether courses are producing good enough results, is easy in virtual schools. Implicit in this suggestion is an emphasis on inputs and outputs rather than the teaching practices, which take place and how teachers might need to shift their pedagogies. It also mirrors current governments' preoccupation with assessment as markers of education system success, as demonstrated for example in the *Programme for International Student Assessment (PISA)* country rankings. Clarke *et al.*, (2005) discusses virtual schooling, where courses can enrich the curriculum of the individual school, enabling remedial or alternative provision or expansion of educational choice. Here the benefits of the virtual school are associated with the learners themselves. However, they go on to note a series of limitations with virtual schools, which are centred on organisational or financial considerations, student attrition and course outputs, for example, high start up costs (which are largely due to staff time in content creation for online spaces), accessibility issues, high dropout rates, difficulty in accrediting courses and low level support from other stakeholders. Accessibility can be viewed on many fronts - from the ability (or digital literacy level) of either students or staff to using the online tools available effectively, to the connectivity (power supply, Internet speeds, computer power) to the VLE platform itself. There is no mention by Clark on how teachers' conceptions of pedagogy or changes that teachers might need to make to work in virtual schools, impacts on the success of virtual schools.

When planning and managing virtual schools, Blomeyer *et al.*, (2005) site four key themes, these being accountability, equity, funding and quality (in Clarke *et al.*, 2005). Some authors (Freedman, 2005) also discuss the importance of technology underpinning virtual schools, reflecting that success and or impact of virtual schools is to some extent measured in relation to technology.

Technology, it could be argued distinguishes distance education from virtual schools. The way a school is planned and managed, whether it is a traditional



model or a virtual school, can have an impact on teachers' professional development, how they learn as a group and on the potential for pedagogic shift. The fact that the school in this study, crosses national boundaries, an aspect not discussed in the current body of literature, may also impact on how teachers change their current isolated teaching practices to teaching in collaboration with others in a virtual international school context.

### **3.5.2 Teaching Online**

As discussed in section 3.5.1, a common facet of virtual schools is teaching online. Virtual schools, potentially provide a platform for extending learning opportunities, but only if there is a change in pedagogical approach. Using the same teaching methods online as face-to-face will not extend learning opportunities per se. Indeed, a UK government strategy document (DFES, 2003), opens with the sentence, "E-learning has the potential to revolutionise the way we teach" (2003:1). However, technology alone is not enough. For technology to transform teaching as we know it, frameworks and processes need to be in place to realize the true potential of technology for educative purposes. This has been recognised by a variety of authors (Davis *et al.*, 1989; Goodhue *et al.*, 1995; Sherry *et al.*, 2002; Mishra *et al.*, 2006) who have put forward various models for technology integration (see section 3.6).

In parallel to the development of integrative models, there has been a growth of interest and debate about the nature of online teaching and online communities, in particular. Harasim (1995) argued that online communities are emerging as a major educational force, providing opportunities for communication, collaboration and knowledge building. In an attempt to explore this view, Boettcher states "the need to return to the core principles of teaching and learning" (1997:online). Coomey and Stephenson (2001) created a grid through which to view online teaching and learning online, based on the notion of independent capability, as shown in Figure 3.1.

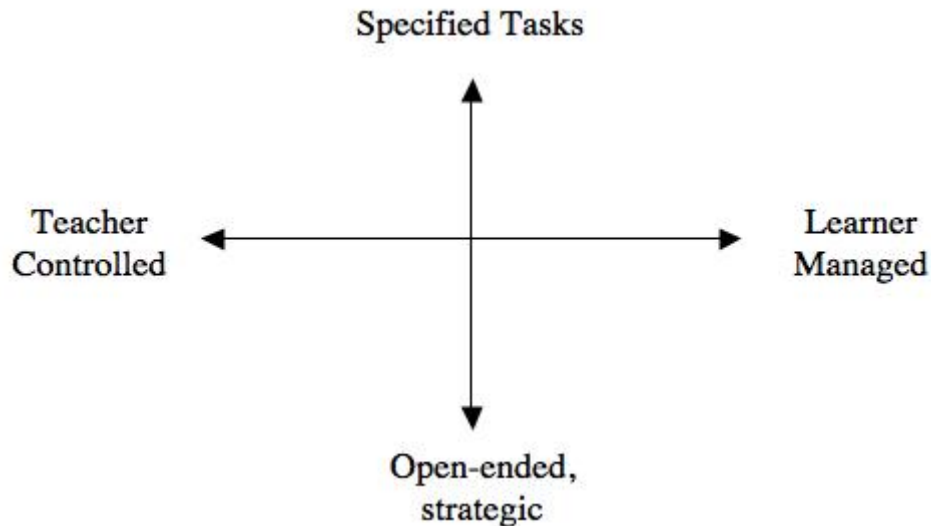


Figure 3.1: A Paradigm Grid for Online Learning,  
(Coomey and Stephenson, 2001)

In this model, there is the notion of both a teacher and a learner. Learning is achieved by gradations of focus between the two, using tasks, either specific or open-ended, strategic. However, this model is simplistic and does not include types of teaching or learning, such as collaborative, individual, inquiry based or problem based learning, for example. Nor does it allow for the fluid nature of teaching or learning, (ULTRALAB, 2002). In using the term 'teacher', the model also maintains a hierarchical structure in the learning process and presupposes a system of education where 'teaching' is something, which is done to someone.

Salmon (2002) offers a five-step model for teaching online in the context of higher education, where the focus of pedagogical practice is on moderation. Although encouraging collaboration amongst learners, teachers in her model appear to work independently of each other, with support of technicians.

### 3.5.3 Blended or Hybrid Teaching and Learning

The concept of blended teaching and learning, sometimes called hybrid teaching and learning today, dates as far back as 1728, (Jones, 2006). However there is still no universal definition of what 'Blended Teaching or

Learning' is. According to Vaughan *et al.*, (2006), in the 21st century it can be seen as a blend between face-to-face and online teaching and learning or the difference in the teaching techniques used. Chew *et al.*, (2008) suggest that blended teaching and learning contains two separate elements, these being education and educational technologies. What is implicit from the various definitions is that there is some sort of mix in the mode of delivery and that usually technology is involved. Beyond that there is no consensus and moreover the emphasis of the definitions tends to be on the blend as opposed to the reason for the blend.

Garrison *et al.*, (2004a) suggest a series of steps to be followed in creating blended courses including clear direction from senior leadership, framing and awareness raising, single point of support, financial support and incentives, reliable and accessible technology, pathfinder exemplars, blended instructional design support, evaluation and critical review and task groups to address specific issues. These may also be relevant in a model for pedagogic shift.

### **3.6 Theories of Technology Integration in Teaching and Learning**

As this research is concerned with pedagogical shift in a virtual international school, technology can be viewed as an inseparable part of the jigsaw. Mishra *et al.*, (2006) suggest that pedagogical changes as a result of advances in technology have been slow to develop and that developing a theory around educational technology use in pedagogical practices is difficult because of the "complex relationships that are contextually bound" (2006:1018). They, along with other authors (Davis, Bagozzi, and Warshaw, 1989; Goodhue and Thompson, 1995; Sherry and Gibson, 2002), suggest models for education technology integration, which will be explored in this section. However, these models have a tendency to focus on new pedagogic techniques, rather than how teachers change their current isolated teaching practices to teaching in collaboration with others through the integration of web based communication technologies into those practices, i.e. pedagogic shift.

### 3.6.1 Models of Technology Integration in Teaching and Learning

A variety of researchers (e.g. Goodhue *et al.*, 1995; Hall *et al.*, 1987; Sherry *et al.*, 2000) have put forward models to aid in the integration of technology in teaching and learning. For example, Davis *et al.*, (1989) put forward the Technology Acceptance Model (TAM), which builds on the Theory of Reasoned Action (Fishbein *et al.*, 1975). The theory of reasoned action seeks to explain any human behaviour whereas TAM specifically looks at computer usage and is thus centred on technology and information systems rather than people. Moreover, TAM is highly prescriptive, coming from a positivistic methodology, which is at odds with the social constructivist perspective most readily at work in the world of education.

Similarly in 1995, Goodhue and Thompson, proposed the Task Technology Fit model, again from an Information Systems position. In their model, they define task technology fit, as the point where the technology enables users to perform tasks successfully. However, rather than looking at how users' attitudes, values and beliefs can enable the integration of technology into practice, the model starts from the perspective of the technology, exploring how the features of a technology increase the performance of individual and organisational tasks. In this situation, the user is not considered which is again at odds with a social constructivist perspective.

In moving towards models that focus more on the individuals, Hall and Hord (1987) conducted a study on how schools might successfully introduce change, arriving at 6 conclusions, which formed the basis of their Concerns-Based Adoption Model (CBAM). The six conclusions are as follows: change is a process, not an event; change is accomplished by individuals; it is a highly personal experience; it involves developmental growth; it is best understood in operational terms. Finally, the focus of facilitation should be on individuals, innovations, and the context (1987). The CBAM is a general model of change, rather than one specially associated with technology integration into teaching and learning. Although it presents stages of concern that teachers may pass through as they learn about innovations, some of these appear to be

indistinguishable from one another (Bailey and Palsha, 1992). Moreover, the stages do not explore the habits of mind or frames of reference, which underpin these concerns.

There are similarities between the CBAM and Diffusion of Innovation theory as proposed by Rogers (1962 and 2003). First and foremost, they are both concerned with how innovations are integrated into particular contexts. In diffusion of innovation theory, Rogers describes (2003) a universal process of social change, not bound by discipline and grounded in communication theory. In relation to educational innovations, he draws upon examples of Information Communication Technology (ICT). Rogers defines diffusion as the “process in which an innovation is communicated through certain channels over time among the members of a social system” (2003:5). The four main elements of diffusion are the innovation itself, communication mechanisms or channels, time and a social system. An innovation can be something tangible, such as a mobile phone or something less tangible, such as a process. There are several stages, which need to be followed, if an innovation is to be successfully adopted, the first of which is termed as ‘knowing’. For an innovation to be accepted or adopted, an individual moves through stages of knowing, from initial awareness, to knowing how an innovation might work, through to more detailed knowledge underpinning the principles of an innovation.

Again, this ‘way of knowing’ is focused on the innovation rather than the individual. Belenky *et al.*, (2000) suggest six stages of knowing, in studies they carried out with women. The important stages for pedagogical shift are ‘separate knowers’ and ‘connected knowers’. They describe separate knowers as those people who try to gain understanding through logical reasoning, finding flaws in arguments to thus build their knowledge. Connected knowers on the other hand seek to explore and understand others’ points of view, holding back on judgments and trying to put their preconceived ideas to one side. In comparison, Rogers (2003) definitions on ‘ways of knowing’ seem more technical than transformative, which might explain why in his definitions, ‘knowing’ does not necessarily lead to adoption of the

innovation. Even to move between these stages of knowing, a 'change agent' (see section 3.3.6) is often required to help the individual or group learn.

In Rogers (2003) definition of a change agent, the role is seen as someone who facilitates the flow of innovations through the maintenance of a communication link, usually with a high degree of expertise within the innovation itself. They help to develop the need for a change, creating an information exchange whilst diagnosing and addressing problems or obstacles. They help to motivate people to change, supporting the individual or group through this so that they keep on track until eventually the change agent is no longer needed, as the group sustains and integrates the innovation into their own practice. This definition is somewhat different to that of Lippitt *et al.*, (1958) who from the outset assumes that a change agent will be selected by those who require help with a potential change, thus potentially missing out on Rogers' first step of awareness raising. Fullan (1993) sees change agents as those who are self-conscious, having an awareness of the unpredictability and volatility of change. He suggests that teachers who are skilled change agents possess open-mindedness and have four key competencies, these being personal vision building, inquiry, mastery and collaboration. Unlike Rogers and Lippitt *et al.*, Fullan argues that everyone has to be a change agent in the context of educational change, as "change is too important to leave to the experts" (1993:39).

Most research in diffusion of innovation theory to date has investigated the innovativeness of the members of the social system. There has been little investigation into the rate of adoption, the role of opinion leadership in adoption, the communication mechanisms / channels or the consequences of adoption, all of which may be important in the process of pedagogic shift. These are all important facets of organizational or group adoption of innovations. Most often, in the context of work, individuals cannot adopt an innovation alone, thus diffusion needs to occur across the network. Rogers suggests that virtual organisations are flexible with less hierarchy than face-to-face or co-located organisations, where the edgeless boundaries are permeable to change and innovation.

When specifically looking at the integration of new and emerging technologies in teaching and learning, Sherry *et al.*, (2000) consider the work of others, including Rogers (2000) and Hall *et al.*, (1987) but find them too limiting for use in education contexts, where there is a complexity of social systems. Indeed both the Concerns-Based Adoption Model and Diffusions of Innovations theories assume static innovations rather than innovations as dynamic processes. Basing their propositions on the *Boulder Valley Internet Project*, Sherry *et al.*, (2000) suggest a learning/adoption trajectory model where teachers progress from instructional technology methods to technology as a tool for enhancing teaching and learning, with facilitative support. The process follows four stages starting with teacher as learner and moving to teacher as adopter, teacher as co-learner and finally teacher as re-affirmer or rejecter. It requires teachers to be risk-takers as they shift their practices to become expert learners themselves. However, it is again based on systems theory and to some extent is a tentative model, demonstrating a linear route, in spite of claims that it is cyclical with teachers jumping between levels and finding an end point where teachers decide whether the time they have spent mastering new skills has been worthwhile.

Based on earlier work by Shulman (1986) the Technological Pedagogical and Content Knowledge model (TPCK), was developed by Mishra *et al.*, (2006) and focuses on the development of individual teachers' knowledge in relation to the interplay of technology, pedagogy and content, through practical study programs. The philosophical basis for this model is grounded in situated cognition. Although there are similarities between this and social constructivism, situated cognition focuses on individual construction of understanding through interactions with the environment, whereas social constructivism sees individual knowledge being constructed first externally through social collaboration, which is then internalized and then played out in the group / context where the individual is located. According to Mishra *et al.*, (2006) the emphasis of their model is on developing "pedagogical techniques that use technologies in constructive ways to teach content" (2006:1029). In many classroom situations where content needs to be taught, this can be seen as useful model however it appears as if this model is less relevant

outside of 'content focused' projects or courses, such as those where inquiry based learning, for example might be used. The TPCK model focuses on learning technology by design as a way of developing TPCK in teachers, rather than focusing on the cultural, goal or value based nature of teachers and educational context. In a context of pedagogic shift, the TPCK model centres on pedagogic techniques and does not allow for exploration of habits of mind or frames of reference, proposed by transformational theorists (see section 3.4.3).

As pointed out in this section, the models so far discussed, which look at the nature of technology used in teaching and learning, have a tendency to focus on new pedagogic techniques, rather than how teachers change their current isolated teaching practices to teaching in collaboration with others through the integration of web based communication technologies into those practices, i.e. pedagogic shift. This is with the exception of the Community of Inquiry (CoI) model put forward by Garrison, Anderson and Archer (2000). Based on a collaborative constructivist perspective, the model highlights a collaborative process as central to meaning making where discourse and dialogue are key components, a process they term as 'transactional'. They add that as well as being transactional their CoI model incorporates emerging technologies. The challenge for educators, they suggest, is to develop approaches to teaching and learning, in order to accommodate the emerging technologies, rather than merely using technologies to enhance or reinforce what already takes place.

With the focus therefore on the people, not the technology, they put forward their CoI model as a way of exploring this argument. It is based on two assumptions, firstly that people are in a learning community made of up of teachers and learners and secondly that teachers are actively engaged in inquiry about their practice. They add that teachers and learners are located in a critical community where they are "transacting with the specific purposes of facilitating, constructing, and validating understanding, and of developing capabilities that will lead to further learning" (2000:23).



Although this transaction readily occurs in face-to-face situations, they suggest that online, without non-verbal clues and the asynchronicity of eLearning this type of transactional process becomes more problematic. The transactional concept is modelled into a three-sphere diagram as shown in Figure 3.2. Each sphere contains a different element, these being Social Presence, Teaching Presence and Cognitive Presence. Social presence is concerned with how the participants are able to present themselves as real people in a technological context, without non-verbal clues and the sometimes stark quality of the written word. Teaching presence relates to the way educators can bring about a worthwhile educational experience through appropriate design and facilitation techniques. Cognitive presence is specifically about the learning experience and measures the extent to which learners can create and articulate meaning through the process of reflection and discourse in the online context.

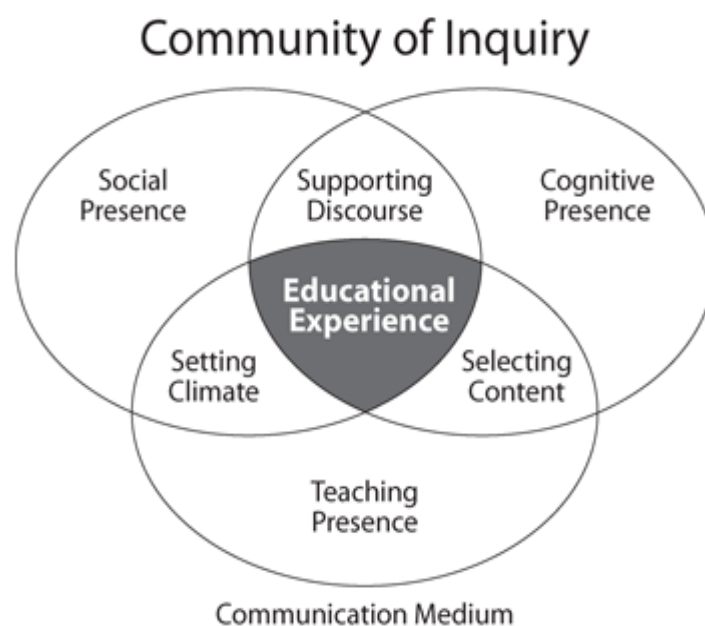


Figure 3.2: Community of Inquiry Model, after Garrison, D. R., Anderson, T. and Archer, W. (2000:28)

Where these three spheres overlap, the authors suggest that an educational experience occurs, as demonstrated in Figure 3.2. In order to explore the spheres, each element has been allocated certain codes and each code has

indicators, which are measured through the analysis of data collected through questionnaires given to those participating in the communities of inquiry. For example, in Teaching Presence, one of the codes is 'instructional management' and the indicator action for this is 'defining and initiating discussion topics'. The analysis of such data can help to inform one of what is happening in the community of inquiry. In the context of this research, the Col model is not useful as an analytical framework, as it includes students (as learners) as a central factor, indeed all the data collection tools they proposed, were aimed for use with the students, rather than the teachers. The focus of this research is solely on how teachers engage in pedagogic shift.

The Col model posed by Garrison *et al.*, (2000) was later repurposed by Vaughan (2004) in his doctoral thesis (supervised by Garrison, the main author of the original model) and later research by Vaughan and Garrison (2006). Their new model was developed specifically for a blended environment where university faculty staff met in a mix of online and face-to-face activities to redesign their courses for blended provision in faculties across the University of Calgary in Canada. Unlike the Col, the focus was on how the teachers worked collaboratively to change their current teaching practices to teaching through the integration of technologies into those practices.

Within the Blended Community of Inquiry (BCol) model the three elements of Cognitive, Social and Teaching presences were remodelled as Inquiry Presence, where teachers are inquiring of new teaching and learning process; Community Presence, where the teachers form social relations to build trust thus supporting and sustaining the inquiry process; and Blended Support Presence, which refers to the online and face-to-face opportunities for building both community and inquiry. During the inquiry process, there is first a triggering event, followed by an exploration of that event, a sharing of ideas and then the application of these new ideas to a situation. Within the community process, trust is first built, which then leads to open communication before finally the group achieves cohesion. In the blended support sphere, the first stage is to organize and design the mechanisms in

which the group can learn together both online and offline. This is then followed by facilitated communications and direct support or tuition as necessary, for the teachers involved. Where the three spheres overlap, the authors suggest that a faculty development experience occurs. Figure 3.3 outlines the model.

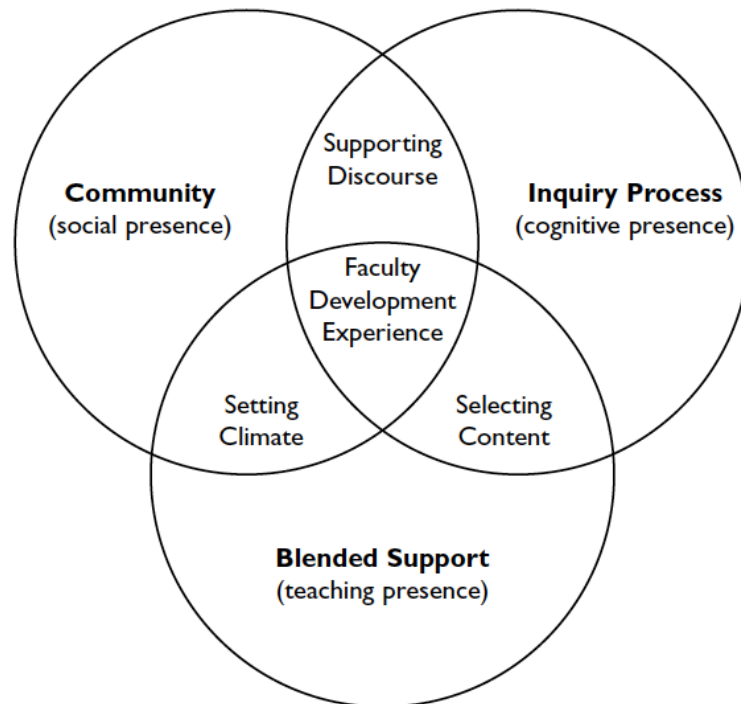


Figure 3.3: Blended Faculty Community of Inquiry Model - presences, (created by Vaughan *et al.*, 2006; adapted from Garrison *et al.*, 2000)

The model was developed to enable tutors to, “discuss and reflect on key redesign questions, explore and experience blended learning from a student perspective, and implement and evaluate their own course redesigns” (2006:67). There are similarities here in processes teachers might need to engage with, in order to shift their pedagogies in virtual international schools.

Vaughan *et al.*, (2006) argue that most basic to the success of the model is what takes place in the inquiry sphere. Within the inquiry sphere, teaching staff progress through a series of activities, which leads to experience and expertise in teaching strategies, curriculum design and technology integration.

Within the curriculum design, teachers are required to reflect upon the creation of course syllabus or outlines. Teaching strategies are developed through a facilitated process of discussions and group work as are technical skills and strategies associated with technology integration. Mentors, students as well as other staff all contribute to a rich discourse in online and face-to-face communications to lead teachers through a transformative change in pedagogical approach. These are highlighted in Figure 3.4.

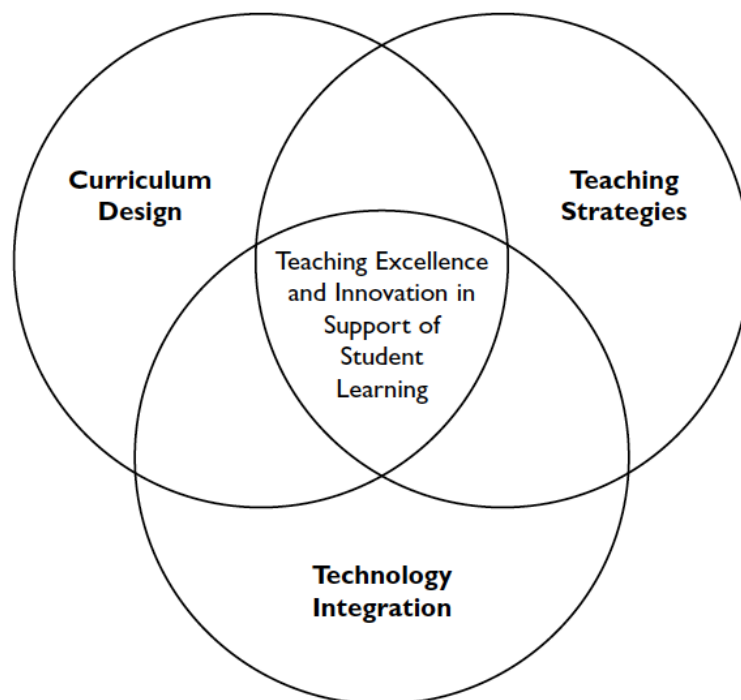


Figure 3.4: Outcomes for the Inquiry through Blended Learning (ITBL) program participants, Vaughan *et al.*, (2006)

The BCol model is useful as an analytical framework in exploring pedagogic shift in virtual international schools, as unlike the others discussed in this section and in common with this research, it focuses on people, rather than technology, innovations or tasks. Indeed, the BCol model has been created as a model through which, lecturers can explore current teaching practices collaboratively, both online and face to face, with other teachers by integrating web based communication technologies into those practices. Moreover, the BCol model uses a blend of face-to-face and online collaboration, as does the virtual international school in this model.

Although based in an higher education context, the BCol model shares other relevant similarities to this research context. As already mentioned, both are concerned with a blended environment, although in the case of Vaughan *et al.*, (2006), face-to-face opportunities are more regular due to the co-located situation of the university. Secondly, staff in the faculty are using an inquiry approach and this is something those in the virtual international school in this context, are aspiring to. Thirdly, the model is concerned with curriculum redesign, driven by the affordances of emerging web-enabled technologies. This research is specifically concerned with teachers changing their teaching practices to teaching in collaboration with others through the integration of web based communication technologies into those practices. Lastly, the model is concerned with an inquiry process about teaching processes. In this research, as part of exploring pedagogic shift, teachers might have to engage in an inquiry process about teaching.

The BCol model describes a process and can be measured using codes and indicators. However, unlike the initial Col model put forward by Garrison *et al.*, (2000) this new model extended the data collection method from student questionnaires, to the inclusion of teacher interviews as well. In this way the authors could directly explore how teachers are engaging in the redesign process, something that student questionnaires alone would be unable to uncover. Investigating how teachers are engaging in the redesign process may uncover evidence on the nature of disorientating events, the process of critical questioning and discussion, dialogue and support, thus contributing to the current research agenda in transformational learning (see section 3.3.4). Given the similarities between this research context and that of the Blended Community of Inquiry model, posed by Vaughan *et al.*, (2006) the BCol model provides a useful lens through which to view pedagogic shift in virtual international schools.

### **3.6.2 Barriers to Technology Integration in Teaching and Learning**

Jacobsen (2001) suggests that “emerging technologies require thoughtful teachers to face fundamental issues and ask essential questions”

(2001:online) as the traditional model of teaching, created for the industrial age, becomes less relevant to our evolving global and technology focused societies. Teachers need to be open to learning and perceive of the need to constantly develop, if not change and transform the underpinning principles on which their teaching practices are based. Often, this is hindered by school processes as the acquisition of relevant skills by learners is “actively discouraged by traditional text-based orientations in school”, which can create conflicts for teachers as they try to negotiate learners’ expectations and manage their own career development paths. Fundamental questioning about the process of teaching is central to the notion of pedagogic shift.

Based on research undertaken throughout schools in Alberta, Canada, Jacobsen (2001) suggests there are still barriers to technology integration in spite of significant investments in infrastructure, resources and professional development. Respondents were asked to identify the top two areas, which were cause for concern, for integrating technology into practice out of the following list:

- Time for planning and development of ICT lessons
- Insufficient hardware (computers, printers etc) in the teaching area
- Technical support (maintaining hardware, supporting the network etc)
- Professional in-service time/funding
- Availability/cost of appropriate software
- Connectivity and bandwidth to the Internet

Of these hurdles, ‘time for planning and development of ICT lessons’ was the most often cited (54.5 per cent) reason for not integrating technology into teaching and learning. Associated with this, 38.6 per cent of the respondents, cited lack of time for professional development as also being a contributing factor. Professional development needs to be of the right kind if it is to be impactful. Training teachers how to use hardware is not enough to ensure use in learning situations, nor are professional workshops emphasizing a complete reform of teaching practices yet taking place away from the schools where those reforms are potentially needed. Rather Jacobsen suggests an

approach of support and mentorship, tailored to the individual needs of the teachers, is likely to lead to the best chance of technology use in teaching and learning situations. However, the research design used in this study was limiting in that the six barriers were prescribed by the researcher. A comparative piece of research was carried out by Hew *et al.*, (2006). Their study analyzed research on technology integration in the USA between 1995 and 2006. Although they also found six barriers to integrating technology into new pedagogic practices, there were some differences to those proposed in the Jacobsen study. They are summarized in Table 3.4.

<b>Barrier</b>	<b>Occurrence</b>
Lack of resources	40%
Lack of knowledge and skills	23%
Institutional barriers	14%
Teacher attitudes and beliefs	13%
Assessment pressures	5%
Subject culture incompatibility	2%

Table 3.4: Barriers to integrating technology into pedagogical practices

The highest scoring barrier to integrating technology was lack of resources, followed by lack of knowledge and skills, which is implicitly linked to professional development, the second highest score in the Jacobsen study.

Although each of these barriers is discussed in isolation, Hew *et al.*, (2006) go on to explain how they are interconnected, impacting upon each other. They put forward a model for demonstrating the relationship between the various barriers, noting that four of the barriers (attitudes and beliefs, knowledge and skills, institutions and resources) directly influence technology integration and two of them (assessment and subject culture) indirectly influence technology integration. Secondary to this they re-categorize the barriers as first order (assessment, subject culture, institutions and resources) and second order (attitudes and beliefs and knowledge and skills) barriers. The common

characteristic of first order barriers is that they are external to teachers. Second order barriers are internal to teachers and in the case of this study are relevant to pedagogic shift as teachers question their assumptions about teaching practices. Based on this formulation, Hew *et al.*, (2006) go on to propose strategies for technology integration and identify a series of gaps in the research, such as the relationship between indirect and direct barriers, relationship between strategies to overcome the barriers and the relationship between barriers and strategies on the one hand and different stages of technology integration on the other.

### **3.7 Defining the Research Gap**

Through undertaking the literature review, a variety of gaps in knowledge have emerged. As this research is specifically aimed at exploring the concept, with the aim of defining, pedagogic shift in the context of virtual international schools, the research gap that will be studied has been narrowed down to that which most directly relates to the research title. However, through the course of this research, data has emerged that also informs other gaps in the research, as identified in the literature review. These data will be discussed in Chapter 7.

The context of this study is Virtual International Schools, which have been defined in section 1.2.3, as those that span national boundaries, are made up of geographically distributed partner schools, which are otherwise unconnected, containing teachers and students from those distributed partner schools who take part in collaborative face-to-face and online teaching, learning and assessments. No models have appeared from the literature associated with virtual schools that cross such national boundaries. Neither does the literature appear to discuss the possible impact of what might be a diverse set of teaching practices in such an international context (see section 1.3.3) and/or the pedagogic shift which may be required as the teachers come together into one virtual international school. Research about pedagogic shift conducted in the context of virtual international schools may give insights on what teaching practices are needed in such a school and help to direct further



studies in this under researched area.

Pedagogic shift is defined in section 1.2.2, as a process where teachers engage with each other to change their current isolated teaching practices to teaching in collaboration with others through the integration of web based communication technologies into new those teaching practices. Central elements from this definition include teaching practices (the strategies and design of teaching), collaboration and technology integration.

Most models on technology integration have a tendency to focus on new pedagogic techniques (see section 3.6), rather than on how teachers change their practices to teaching in collaboration with others. Indeed, models of technology integration have been just that, focusing on the innovation, techniques and processes used with technology and being born out of systems theory, organisational theory or activity theory perspectives, rather than on teachers and how they change to accommodate new pedagogies for a digital age and global society.

It appears that even the Community of Inquiry model put forward by Garrison *et al.*, (2000) has been largely theoretical, with only a small number of studies collecting empirical evidence. Moreover, these empirical studies have focused on data collection from student learners rather than the teachers themselves and they do not examine the underlying processes required for pedagogic shift to occur. The model also appears limiting in that it is based in a context where the group of learners are co-located, rather than distributed. This research on pedagogic shift is located in a blend of face-to-face and online. Although Vaughan (2004) and then later Vaughan and Garrison (2006), extend the Community of Inquiry model into a blended context, it is also limiting, as it has not been explored in wider contexts outside of the original domain of a single institution in Higher Education.

Vaughan *et al.*, (2006) argue that most basic to the success of the model is what takes place in the inquiry sphere (see section 3.6.1). This sphere has particular relevance to pedagogic shift, as defined in section 1.2.2, as it is also

concerned with a change in teaching practices. This research could lead to new understanding of the inquiry sphere in virtual international schools, rather than just Higher Education contexts, thus extending its applicability.

### **3.8 The Refined Research Questions**

This research aims to address the research gaps (see section 3.7) by exploring the concept, with the aim of defining, pedagogic shift in the context of virtual international schools, using the refined research questions presented here.

In the context of a pan European virtual international school:

**RQ1.** Are curriculum design, teaching strategies and technology integration changing over time?

**RQ2.** What factors are inhibiting and/or contributing towards any change?

The research design, which enables the exploration of these two research questions, will be discussed in more detail in Chapter 4 - the Research Design.

### **3.9 Distinct Contribution to Knowledge**

This research has the potential to create a model to support teachers from different cultural and national contexts, as they engage in pedagogic shift in a virtual international school. Such a model is important in an increasingly multi-national teaching and learning context, where people have to learn to work across geographical boundaries, creating and sharing vision whilst transforming their practice on and off line.

The research may also contribute to the developing theory of transformational learning and potentially extends the context in which the Blended Community of Inquiry model can be used.

### **3.9.1 The Intended Audience**

As well as for the teachers themselves, such research would be of interest to local and national decision makers or funders who promote the use blended (face-to-face / online) programmes. For example, within the European Union teachers are being encouraged through local and national programmes to engage in cross border collaborations (e.g. the EU series of Lifelong Learning Programmes, including Erasmus+). Wider afield international collaborations are also occurring through school partnerships. For example, in the UK, the Department for International Development provides funding and support for global school partnerships. There are also many other informal partnerships growing between schools internationally for who this research would be of interest and use.

This model will help teachers and teacher educators all over the world, understand the process of change they need to go through and the resources it will take, to embrace the full potential of web based communication technologies in their international online collaborations and contexts.

### **3.10 Summary**

The aim of the chapter was to explore a set of literature, the selection of which was informed by initial findings from the Cycle I (Pilot Study). The research aim of this thesis, as set out in Chapter 1, sections 1 and 2, is to explore the concept, with the aim of defining, pedagogic shift in the context of virtual international schools. Therefore literature associated with this aim was located and reviewed, with the key issues, concepts and theories presented throughout this chapter. From reading the literature associated with the research, gaps in the knowledge have been identified which has led to a penultimate section in this chapter, which includes the refined research questions, the distinct contribution to knowledge and the intended audience.

## **Chapter 4 - Research Design**

### **4.1 Introduction**

This chapter explains the methodological approach used in this research. After giving a brief overview, the interpretive paradigm is discussed, before outlining constructivist grounded theory, which is the chosen approach for this research. The middle section of this chapter explains the selected research methods, followed by a discussion on the research quality. After a presentation of ethical considerations, this chapter ends with a summary.

### **4.2 The Research Paradigm**

The nature of this research is social as it deals with people, their environments and processes within them. A theory is not being tested out rather the research seeks to extrapolate new insights from the data to develop new ideas about real situations. As such, a scientific methodology is not appropriate, as it is not possible to separate the subjects from their contexts. Instead a social research methodology, using qualitative methods has been used. This research has specifically adopted an interpretive approach, using abductive reasoning (see section 4.2.3), derived from constructivist grounded theory (Charmaz, 2000). In grounded theory, one does not set out to test a hypothesis, rather one searches for understanding in the research situation as it is. The focus of this research is to explore the concept, with the aim of defining, pedagogic shift in the context of virtual international schools. As there is potential complexity in this context a methodological approach is needed, which enables emergence rather than prescription. Grounded theory is, at its heart, emergent with cycles of data collection and analysis informing further cycles of data collection and analysis. Complexity is heightened in that

the researcher, as well as exploring pedagogic shift in the virtual international school setting is also, through this research, reporting back on research findings to help the ELvis group identify barriers and challenges, which they face in realizing the ELvis vision and to suggest and trial strategies to overcome these.

#### **4.2.1 The Interpretive Paradigm**

Research, which is carried out in positivistic studies is most often associated with frequencies and enumeration, with an emphasis on learning new facts through the testing of hypotheses. This is based on an ontological view that the world is predictable, ordered, governed by universal laws and can be quantified (Cohen *et al.*, 2011). In studies carried out using a positivist or objectivist approach, the emphasis is on identifying facts, relationships between pre-selected factors or proving whether something is right or wrong. For research, which is trying to interpret how participants shift pedagogical processes and practices, this form of research is too prescriptive. An alternative perspective to this ontological view of the world is available, which is more subjective in nature. According to Cohen *et al.*, (2011), although there are numerous anti-positivist schools of thought, they all share a common view which is fundamentally different to the objective, positivist perspective, noting that the world is a “messy place, full of contradictions, richness, complexity, connectedness, conjunctions and disjunctions” (2011:219).

Using a more subjective approach, anti-positivists understand individual experiences to be directly related to social reality. Cohen *et al.*, (2011) add that researchers subscribing to this view are concerned with interpreting how a person makes sense of the world in which they are located. In studies carried out using this approach, the emphasis is on interpreting a person or persons from within, noting what their interpretations of the world might be. Rather than identifying facts, relationships between pre-selected factors or proving whether something is right or wrong, this interpretive paradigm allows theory to emerge from particular situations, contexts or interactions so that the behaviours of people can be understood. An interpretative paradigm thus

enables research into how teachers might reframe deeply held views on teaching practices, which are inhibiting or contributing towards pedagogic shift. Within an interpretive paradigm, the research is contextual and grounded (Glaser *et al.*, 1967) and using an abductive process, theory is derived gradually from sources, which are tested out, viewed against established theories, which may eventually be generalized to form a body of knowledge.

#### **4.2.2 Constructivist Grounded Theory**

According to Charmaz (2014) grounded theory has largely grown out of tensions between qualitative and quantitative sociological research during the 1960s in the USA. The more quantitative scientific traditions perceived qualitative researchers to be unsystematic, biased, anecdotal and impressionistic (2014:6). However, as a result of their quantification approach, which favoured research, which could be replicated and verified, studies into human problems were rarely undertaken. Growing out of this objectivist paradigm and a need to develop an acceptable methodology where qualitative methods could be conducted with rigour, Glaser and Strauss (1967) put forward their concept of grounded theory. They purported grounded theory to be systematic qualitative methodology, using logic to generate theory without the need for quantification. In their book, *The Discovery of Grounded Theory*, first published in 1967, Glaser, a positivist, outlined the basic method of codification whilst Strauss, a pragmatist, incorporated the concepts of 'human agency, emergent processes, social and subjective meanings, problem-solving practices and the open-ended study of action' (2014:9) into grounded theory.

According to Charmaz (2005) grounded theory refers to both the product of inquiry and the method of inquiry used. Indeed, some researchers use the term grounded theory to specifically describe the manner of their data analysis, as the theory also offers tools for the analysis process. The key tenet of this approach is that theory in social research may be discovered from data, if it is collected and analyzed through different phases in a

systematic and orderly manner. Data collection and analysis take place simultaneously, with one informing the other and leading to the emergence of categories, which can then be tested out and viewed against established theories. Through this process grounded theory is discovered and enables conceptualization where researchers can describe and give explanations. It is fundamentally based on the premise that any findings using this approach will generate a theory that is relevant to its supposed uses. Categories leading to conceptualization should be clear so that they may be readily understood to laymen, students and scholars alike. Furthermore, Glaser *et al.*, (1967) emphasize how categories should emerge, rather than being 'forced out' from the data and constantly compared against data and theories to find new meanings and 'fit'.

Since Glaser and Strauss's original formation of grounded theory in 1967, divergent schools of thought have emerged out of their original text. Indeed Glaser and Strauss themselves have disagreed on major issues, demonstrated in the letters published by Glaser in his book *The Basics of Grounded Theory Analysis: Emergence vs. Forcing* (1992:1-7), where he accuses Strauss (and Corbin) of creating a new methodology which 'forces' data, rather than allowing it to 'emerge'. In essence, Glaser approaches grounded theory from an objectivist viewpoint, believing that theory should emerge directly from the data. However, Strauss, and later Strauss and Corbin (1990) maintain that the emergence of data is guided by theory. The implications of this divergence, is discussed in more detail in section 4.2.3 later in this chapter.

According to Denscombe (2002), grounded theory has five distinguishing facets: it is pragmatic; analysis should lead to the generation of concepts and theory; theories should be grounded in empirical reality; it requires an open mind as one sets out; it should be inclusive of all possibilities in terms of subject / instances selection as the direction of the study cannot be predicted at the outset. Urquhart (2010) suggests an alternate, although not contradictory view, with key characteristics including a process of constant comparison running through analysis and conceptualization, 'slices of data'

used from varied sources and the analysis of these leads one to the next 'slices of data', research should not have preconceived ideas and ultimately the aim is to build theory.

A common feature of both Denscombe and Urquhart's interpretations of grounded theory is the need for an open-minded researcher who leaves preconceptions out of the data collection and analysis process. Indeed, Glaser (1994) suggests that a substantial literature review should not be done initially as this can impede the researcher's ability to view the data with an open mind and moreover, carrying out such a literature review will be suggestive for the researcher, hindering the process of an 'emergence' of categories from the data. According to Strauss and Corbin (1994) grounded theory methodology is flexible and can be used from a variety of starting points, (e.g. phenomenology, symbolic interactionism) and in conjunction with other approaches, although later work from Strauss and Corbin has been criticized (Glaser, 1998; Charmaz, 2000) for being too prescriptive and didactic, decreasing flexibility and preventing emergence of themes and categories.

Not only have Strauss and Corbin been criticised, but so too has grounded theory methodology more generally. For example, Bryant *et al.*, (2007) note those who claim it unscientific (Spalter-Roth, 2005) or epistemologically naïve (Emerson, 1983; Katz, 1983), whilst Charmaz (2014) discusses those who suggest grounded theory methodology clings to outdated modernist perspectives (Conrad, 1990; Richardson, 1993; Ellis, 1995).

Subsequent scholars e.g. Charmaz (2005) have sought to advance grounded theory within an interpretive paradigm. Her notion of constructivist grounded theory has specifically been developed to answer these critics of earlier versions of grounded theory. Her conception of constructivist grounded theory begins with an "assumption that social reality is multiple, processual and constructed" (Charmaz, 2014:13) and therefore the researcher cannot be viewed as separate to that which is being researched. Frameworks are generated which enable the subjective interpretation of relationships between



process and people and context. Theory is thus constructed, rather than discovered. Charmaz argues that we do not disengage ourselves in the analytical process of research,

“...rather the entire research process is interactive ... as we bring past interactions and current interests into our research, and we interact with our empirical materials and emerging ideas.”

(2005:510)

No matter how hard we try, Charmaz suggests it is inevitable and unavoidable that we bring ourselves to the context of research and rather than suggest that we can be objective, as Glaser (2002) does, that we should build a theory that acknowledges subjectivity. In her constructivist version of grounded theory, she highlights the importance of the researcher / participant relationship, suggesting that data can only be collected as a result of the relationship, which is built through trust as the researcher and participants co-construct meaning. Constructivist grounded theory, according to Charmaz,

“...assumes that people create and maintain meaningful worlds through dialectical processes of conferring meaning on their realities and action within them.”

(2005:521)

Charmaz argues, that by using the constructivist grounded theory approach research can be interpretive, rather than objective and more relevant to social science discourse.

As a purist, Glaser (2002) responds to Charmaz, accusing her of remodelling grounded theory. However, other academics (Willson Scott, 2004; Mills *et al.*, 2006a) have argued that different forms of grounded theory can exist and that they differ mainly through the relationship between researcher and participant. Throughout their collaboration, Charmaz suggests that Strauss and Corbin fluctuated between grounded theory which was sometimes more objective and at other times more constructive (Charmaz, 2000).

Constructivist grounded theory sits well with this research, as there is an ontological match between current learning theory (social constructivism, see section 3.3.1) and the blended community of inquiry model (based on collaborative constructivism). There is also an ontological match with transformational learning theory, where problematic frames of reference (formed and bound by language and culture) are challenged by questioning values and beliefs. Charmaz (2000) states that in discovering constructivist grounded theory, “we must look for view and values, as well as for acts and facts” (2000:525). There are criticisms of the grounded theory methods and these are discussed in section 4.4.4 of this chapter.

### **4.2.3 Abductive Reasoning**

The two forefathers of grounded theory, Barney Glaser and Anselm Strauss (see section 4.3.2) came together from different theoretical perspectives, which ultimately led to a divergence in grounded theory methods as it developed in the 1970s and 1980s. Reichertz (2007) suggests that this divergence can be characterized to some extent as a difference between inductive and abductive reasoning. On the one hand, Strauss (1987) emphasized the use of theoretical pre-knowledge as an important input to data analysis, whereas Glaser (1991) maintained that codes and categories should emerge directly from the data. Glaser believes that grounded theory can *only* be discovered directly from the data (see section 4.2.2). However, according to Reichertz (2007), Strauss (1987) and later Strauss and Corbin (in the first edition - 1988 - of the Basics of Qualitative Research) take “into account that observation and the development of theory are necessarily always guided by theory” (1988:215). Reichertz suggests that this approach assumes an abductive research logic. He adds that although the roots of abduction can be traced back to Pacius (1597), it was Pierce (1839-1914) who defined it as a distinct form of reasoning, separate from both deductive and inductive logic.

Deductive logic can be viewed as a pathway of reasoning, where a researcher starts with a general or abstract idea and hones in on specific instances

(Cohen *et al.*, 2011; Charmaz, 2014). An inductive approach is where data is collected on a case by case or individual basis and built upon through subsequent collection and analysis to make generalizations, deriving abstract conceptualizations from detailed description and analysis (Bryant *et al.*, 2007; Cohen *et al.*, 2011). Inductive and deductive reasoning can be seen as opposite, with the former starting with the specific and reaching generalizations, whilst the latter begins with generalizations and hones in on the specific.

Bryant *et al.*, (2007) suggest that a problem of just using inductive reasoning is that it requires a leap of thought to link a specific idea with a general concept, which some critics consider renders the process 'unempirical'. Bryant *et al.*, (2007) add that although one might collect countless perceived identical observations, there is no certainty that a researcher can make generalizable conclusions from the observations. Glaser *et al.*, (1967) suggest that the main problem with using deductive reasoning is in its failure to generate new theories.

According to Charmaz (2014), abductive reasoning takes place where a researcher initially examines data inductively, searching for surprising or puzzling events, ideas or practices, which are problematic to explain. Having scrutinized the data, theoretical perspectives are considered in conjunction with the data, which together are used to create tentative suggestions, which can be tested out to confirm or disconfirm explanations. This is done until a plausible theoretical interpretation can be reached regarding the observed data.

Pierce (1898/1992) argues that abductive reasoning is the only true way of extending knowledge through inference. Reichertz (2007) posits that abduction can be viewed as both a logical and an innovative process of inference. The logical characteristic gives the theory generated, empirical weight, whilst the innovative characteristic enables profound insights, which help to develop new knowledge. He states that abductive reasoning enables researchers to "make discoveries in a logically and methodologically ordered

way” (2007:216). Abduction thus combines both imaginative and rational forms of reasoning, extending inductive logic and answering critics concerns that grounded theory methodology is an “epistemological fairy tale” (Bryant *et al.*, 2007:16).

Bryant *et al.*, (2007) suggest that where grounded theory methodology works really well, researchers have been able to find a balance between ‘grounding’ and ‘distancing’ consistently over time, a process, which then leads to substantive conceptualization. Using this abductive process of reasoning, researchers guard against ‘descriptive amplification’ on the one hand and conceptualizing on thin data on the other, what Glaser calls “immaculate conceptualization” (1978:8).

### **4.3 Research Methods**

Within this research, pedagogical shift is being investigated in association with three inter-related concepts these being curriculum design, teaching strategies and technology integration. The research design needs to be flexible enough to extrapolate data from a complex interplay of variables such as teachers’ conceptions of pedagogy, teaching practices and the integration of technologies across national boundaries. In using a constructivist grounded theory methodology, concepts associated with change and pedagogic shift can be explored in a flexible manner, from a variety of sources. Quantitative methods would not work, as they are too rigid for this kind of exploration. A qualitative approach was therefore followed. In the initial Cycle I (Pilot Study), questionnaires, focus groups and documentary evidence were trialled. As a result of trialling these methods (see section 2.5.1), Cycle II (Identification of Key Themes) and Cycle III (In Depth Exploration of Key Themes) used a mix of interviews and questionnaires leading to focus groups (see section 4.3.2). Data was triangulated through this mix of these methods and with the use of an independent judge (see section 4.4.2).

### 4.3.1 Research Design

This research project has been designed following a constructivist grounded theory methodological approach as put forward by Charmaz (2000). This meant that an initial pilot exploration into the research context was carried out prior to the literature review. Glaser (1994) suggests that a literature review should not be carried out before a preliminary round of data collection and analysis has taken place (see section 1.5), as it may be suggestive for the researcher, hindering the process of discovery. However, this is at odds with the most commonly accepted purpose of a literature review in research projects, which is to identify crucial questions, gaps in knowledge and key issues prior to the start of a project (Denscombe, 2002; Bell, 2004; Finn 2005). According to Chamaz, (2014) the debate on when the literature review should be carried out is still hotly contested, primarily because no researcher approaches the area of study as a blank canvas (Urquhart, 2013). Rather they will have read associated areas of literature and have opinions based on previous experiences. To help put aside past experiences and to prevent literature from influencing the initial emergence of codes and categories, Henwood *et al.*, (2003) suggest that we should adopt 'theoretical agnosticism' where all possible theoretical interpretations should be considered, whilst at the same time remaining critical and skeptical of such theories.

The design of this research study is shown in Figure 4.1. It began with Cycle I (Pilot Study), which was carried out prior to a literature review. The aim in this cycle of research was to both initially explore the use and adoption of web based communication technologies as teachers shifted their pedagogies towards teaching in collaboration and integrating technology and secondly, to trial data collection methods and data analysis techniques based on a constructivist grounded theory (Charmaz, 2000).

After the initial data collection and analysis, the Cycle I (Pilot Study) findings led to a literature review, from which gaps in the research were identified and the research questions were refined. The new research questions led to two further cycles of data collection and analysis, Cycle II (Identification of Key

Themes), discussed in Chapter 5 and Cycle III (In Depth Exploration of Key Themes), discussed in Chapter 7. The purpose of Cycle II was to explore the new research questions associated with pedagogic shift, which were derived from the literature review and in so doing, identify key themes that would inform a new model of pedagogic shift. The purpose of Cycle III was to conduct in depth exploration through the collection and analysis of data that would lead to a refined model of pedagogic shift, by saturating (see section 4.4.3) the emergent themes and categories.

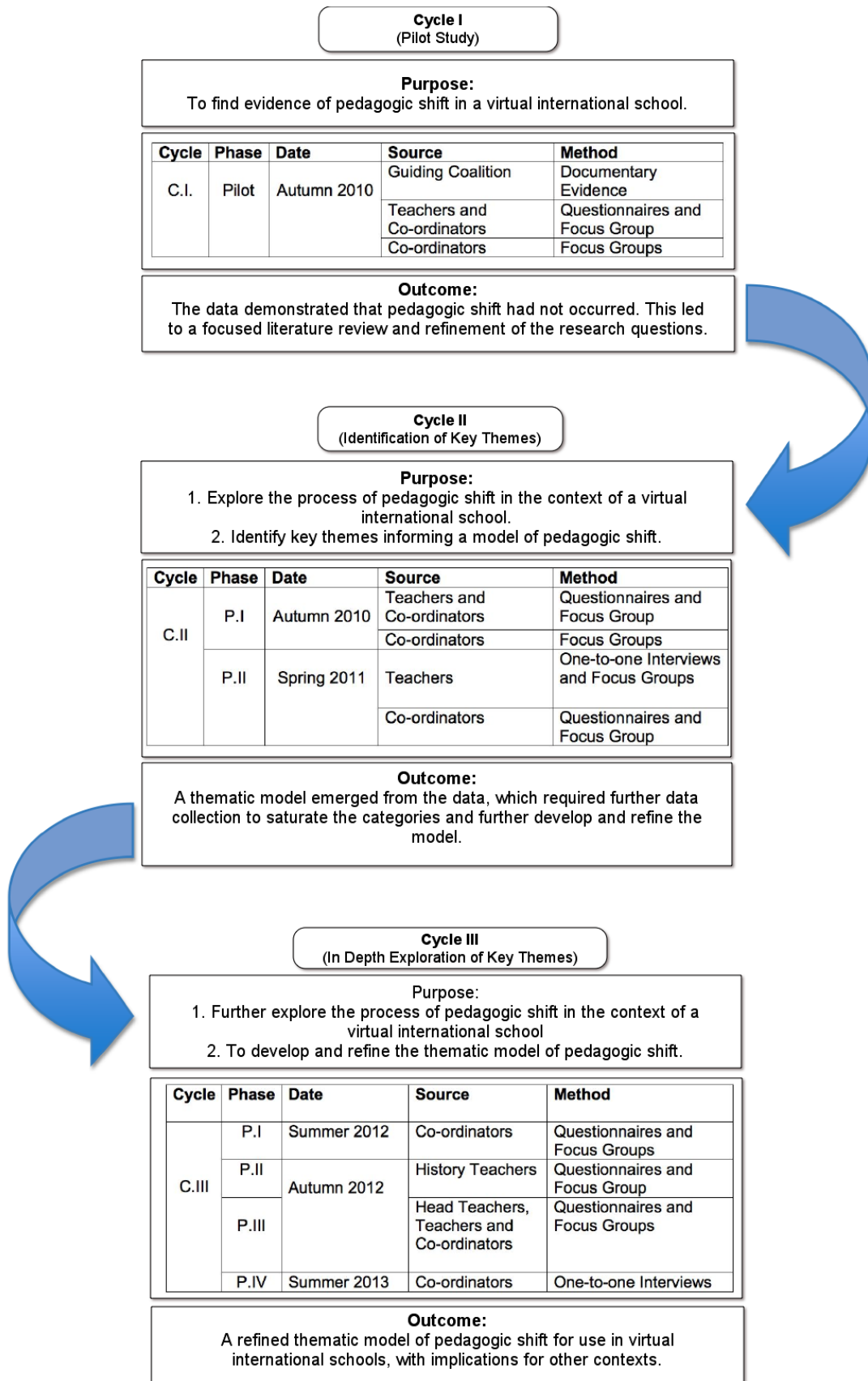


Figure 4.1: The research design summary, illustrating the purposes, phases, methods and outcomes of the three research cycles

Cycle II (Identification of Key Themes) and Cycle III (In Depth Exploration of Key Themes) were carried out in line with the two separate funding terms of ELvis. At the end of each funding term, the ELvis coordination team reflected on their journey refocusing their efforts and refining the pedagogical model for the following funding phase, thus it was logical to also use this change in funding terms to separate out the cycles of data collection and analysis. Within Cycle II (Identification of Key Themes) and Cycle III (In Depth Exploration of Key Themes), data was collected during different phases as demonstrated in Table 4.1

ELvis 1.0 - Funded from Sep. 2009 to Aug. 2011		ELvis 2.0 - funded from Sep. 2011 to Aug. 2013		
Cycle I (Pilot Study)	Cycle II (Identification of Key Themes)		Cycle III (In Depth Exploration of Key Themes)	
One phase only, to conduct a pilot into the research context	Phase of Research	Reason for Phase	Phase of Research	Reason for Phase
	Phase I (Autumn 2010)	To re-analyse the data collected in the pilot, as a result of learning how to analyse data and in light of the new research questions.	Phase I (Summer 2012)	This was the end of the 1 <sup>st</sup> year of the second funding term for ELvis, and one academic year after the last data collection, giving teachers time to explore and potentially shift their pedagogies.
	Phase II (Spring 2011)	End of ELvis 1.0, after it had completed its first 2year funding term.	Phase II (Autumn 2012)	Data was sought from a specific project which had run during the 1 <sup>st</sup> year of ELvis 2.0, as it had involved all the distributed partnership of schools.
			Phase III (Summer 2013)	End of ELvis 2.0, after it had completed its second funding phase. Data was specifically sought to investigate the emerging model of pedagogic shift.

Table 4.1: Summary of different funding terms, research cycles and phases of data collection



In all data collection and analysis cycles, the data collection was conducted as part of the natural environment of the ELvis project. Teachers, co-ordinators and managers were expecting evaluation and review to be built into the meetings from where the data was being sourced.

#### **4.3.2 Data Collection Methods**

The following section describes the data collection methods that were used in this research. They were used in combination to offset weaknesses inherent in each method to aid in the triangulation process and to assist with the emergent nature of constructivist grounded theory. In constructivist grounded theory, Charmaz (2014) suggests that documents are a major form of data as they include the transcribed interviews and observations notes, for example, collected during the study. However, they may also include written reports or communications. Urquhart (2013) maintains that documentary data gained from transcribed interviews or observations, can only give part of the story as once they have been written down, they lose context as the tone of voice cannot be conveyed, nor the non verbal communications be viewed. She argues, that in a digital age, we should be including the use of visual materials in data collection, such as photographs and video recordings. In this research, no visual material was collected or recorded as it was considered too intrusive. Documentary data in this study comprised of ELvis mid term and annual reports to the EU, a specific project report (i.e. the History Project - including emails, working docs and student reflective work relating to this project) and all the transcriptions from interviews, discussions and focus groups and the collated questionnaires.

##### Documentary Evidence in the form of Reports - used in Cycle I (Pilot Study)

Documents such as reports, speeches, official records and diaries are most commonly associated with historical research (Cohen *et al.*, 2011) and are often created for other purposes other than research (Charmaz, 2014). Indeed, unlike other collection tools, documentary evidence is often, although not exclusively, in existence prior to the research being carried out. Two main types of documentary evidence can be distinguished. The first is documentary

evidence from primary sources, in other words the evidence has been created by the people / person who is centrally located in the data context at or near to the actual time of the occurrence. Cohen *et al.*, (2011) suggest that secondary sources refer to data where there is no “direct physical relationship to the event being studied” (2011:161), for example the evidence is not in its original form, rather it has been analysed, interpreted or recreated in another form by some other person. In this research, primary source reports were used only in Cycle I (Pilot Study) as a way of introducing the researcher to the specific research context and informing, in conjunction with the other tools, the direction of further phases of research. In reality, they did not provide data at a sufficient enough depth to progress the research (see section 2.4.1).

#### Questionnaires - used in all three Cycles

Gillham (2000b) argues that deriving useful data from questionnaires is problematic as they are often completed quickly and in a superficial manner, no matter how well they are designed. Moreover, in isolation, meaning cannot be clarified and honesty cannot be checked. However, questionnaires can prove useful starting points, especially when used in conjunction with other data collection methods such as group discussions, interviews and focus groups. Charmaz (2014) suggests that in using questionnaires in constructivist grounded theory, it is essential that researchers “have a stake in the addressed topics” (2014:48), viewing the questions as significant to them. To this end, they were only used in conjunction with focus groups and were developed to reflect the aims and objectives that the teachers themselves were attempting to address, as identified in their project documentations.

#### Focus Groups - used in all three Cycles

According to Cohen *et al.*, (2011), focus groups can be viewed as a type of group interview, where participants discuss an issue or set of questions, posed by the researcher. This technique was employed during this research study, to give freedom for teachers to explain reasons and reflect upon teaching strategies, technology integration and curriculum design as a group. Focus groups are useful, particularly in constructivist grounded theory, where individual and group transformational change are being investigated, as it

enables discussions to develop and different realities to be shared across the group, with skilled facilitation probing underlying meanings (Watts *et al.*, 1987). However, there can be difficulties with the focus group format, such as giving equal voice, navigating disagreement and conflict and preventing discussions from becoming side-tracked by other unrelated issues (Gillham, 2000a).

Two forms of focus groups were used in this research. One type was structured, where the researcher offered a framework or questionnaire for participants to work through on their own prior to the researcher leading them through a group discussion. The second type were open-ended, with the researcher facilitating a group discussion based on a specific topic. Both forms were recorded using a digital voice recorder and then transcribed into a rich text format (rtf) file. According to Urquhart (2013) a criticism of transcription is loss of context when a voice is not heard. The use of bold text was used in transcription to reflect emphasis evidence by voice tone and / or inflection and to overcome such criticism.

#### Interviews - used in Cycles II and III

Interviews enable those participating in them, to explore meanings and express points of view (Cohen, 2003). In using interviews as a data collection technique in research, human interactions are placed at the centre of knowledge creation, (Kvale, 1996). This viewpoint is inline with a constructivist epistemology, which sees the interaction between the inquirer and the inquired into as necessary for data generation. In constructivist grounded theory, Mills *et al.*, (2006a) suggest that “depth, feeling and reflexive thought” (2006:8) are required during the narrative interaction to co-construct meanings and articulate realities.

Such notions as depth and reflexivity can only be achieved if there is a degree of mutual trust between the interviewer and interviewee. According to Cohen *et al.*, (2003), trust may not be the same between all those being interviewed and imbalances in power between those on the interview stage may skew potential data. However, Mills *et al.*, (2006b) suggest that establishing

reciprocity can counteract any imbalances noting a series of strategies to enable equality between the interviewer and the interviewed. In the context of this study, the researcher has helped to build trust and reciprocity with the research participants by being open and giving regular feedback on research progress.

Gilham (2000a) suggests that interview techniques, which “use ‘natural conversation’ to ask research questions” (2000:6) can help to build trust and reciprocity, conditions required in the discovery of constructive grounded theory. In this type of interview, questions emerge from the immediate context, are relevant and organic (Patton, 1980). However, such open interviewing can lead the researcher to collect different information from different participants resulting in a less systematic and comprehensive coverage. Interviews that used a guided approach were therefore used in this research to ensure that all specific topics and issues were covered, but that the interviewees still had the space to shape meanings and articulate their realities.

#### **4.3.3 Data Analysis Process**

Data on its own means nothing unless it can be interpreted, analysed and transformed into something meaningful and tangible. Marshall *et al.*, (1990) suggest that, data analysis,

“... is the process of bringing order, structure and meaning to the mass of collected data. It is a messy, ambiguous, time-consuming, creative, and fascinating process. It does not proceed in a linear fashion; it is not neat.”

(1990:207)

There are a whole raft of tools available to enable the analysis of data and depending on what methods of data collection have been employed, will to some extent drive the need for the use of certain analytical tools. Cohen *et al.*, (2003) argue that the well-prepared researcher will select the data analysis tools in conjunction with the data collection methods, to enable them to gather

data efficiently and enhance the opportunity for accurate analysis.

The majority of data collected in this research was qualitative in nature. With quantitative data there are conventions to follow, such as creating data sets, looking at frequency distributions and using software packages such as SPSS to undertake statistical analysis. Tesch (1990) suggests 4 main groupings for qualitative analysis, these being: the characteristics of language; the discovery of irregularities; the comprehension of the meaning of text or action; reflection. Alternatively, Crabtree and Miller, (1992) suggest four different data analysis methods, which are more akin to the data collection tools used.

These are quasi-statistical methods; template approaches; editing approaches; immersion approaches. Miles *et al.*, (1994) provide a framework, which they describe as fairly common in looking at qualitative data:

- Giving codes to the initial set of material obtained
- Adding comments and reflections 'memos'
- Identification of similar patterns, themes, phrases, relationships, sequences, differences between groups
- Using these themes to inform the next wave of data collection
- Elaborating a small set of generalizations
- Linking generalizations to form a new body of knowledge

In constructivist grounded theory, Charmaz (2000) suggests data are analyzed using a systematic approach, where the researcher is fully immersed. At its core, this systematic approach of data analysis is a process of constant comparison between categories and data. Thus analysis of data begins early as a researcher interacts with the data, constantly asking questions of the data as it is coded. As this research draws on constructivist grounded theory, analysis will follow the process outlined by Charmaz (2014), as she is the main proponent of this methodology. The analysis process thus consisted of line by line coding and memo-ing, using the similarities in the text to define categories. The emergence of categories informed further data collection and analysis. Finally the codes, memos and categories were then compared with current theoretical perspectives.

Urquhart (2013) describes coding as the way in which conceptual labels are linked with specific data. As codes are linked together, relationships and patterns between and within the codes start to emerge. Coding helps to build categories and constructs, which in turn are analysed to determine differences, relationships and similarities. This analysis is then used to develop theoretical concepts. In this research, all data was transcribed into rich text format files and then coded line by line, using a qualitative analysis tool (HyperResearch, version 3.0.2). However, after the initial coding and during the memo-ing and re-coding, it became necessary to print up data and continue memo-ing and recoding by hand, using colour felt tips to make coded notes on the pages. This allowed for a more creative process and patterns, themes, phrases, relationships, sequences and differences between groups were easier to identify.

#### **4.3.4 Building Theory**

According to Urquhart (2013), a general criticism of grounded theory methodology is in its inability to go beyond low level description. However, Charmaz (2014) argues that the concept of what constitutes theory is ambiguous in grounded theory, with disagreements between theorists regarding what methods to use and what a final theory should look like.

There are a variety of definitions of theory in the interpretive paradigm, Charmaz (2014) argues, but in common, they emphasise interpretation, focusing on abstract understanding, rather than explanations. As constructivist grounded theory is the approach being used, a interpretive definition of theory is being used. Urquhart (2013) suggests that there are four components to such a theory. The first is 'means of representation', by which she means the initial proposition or model. The second element is the 'constructs', of which there should be several in grounded theory. Thirdly, she points to 'statements of relationship', which refers to links, similarities and differences between categories and lastly 'scope' which views the ability of the theory to be generalized (2013:106).

In order to move beyond low level description and to start building theory, a number of techniques have been deployed as discussed in the remainder of this sub section.

#### Theoretical Sampling, Saturation, Sorting and Sensitivity

Once initial coding has taken place, the categories started to form and relationships began to emerge. At this point a second phase of data collection and analysis was required, specifically drawing upon sources of data that enable the categories to be fully developed. This technique is known as theoretical sampling. According to Charmaz (2014) data should be selected, which can illuminate the properties within categories. Memo-writing can help inform this process so that theoretical sampling is carried out in a strategic and systematic manner. Saturation is reached, once the data collected and analysed ceases to inform the categories under construction. Charmaz (2014) describes how at this point, theoretical sorting takes place. This is where the categories and theoretical memos are arranged diagrammatically in order to develop the abstract understanding that can be generalized. Holton (2007) suggests that a researcher's ability to conceptualize resides in their ability to create categories from data and relate them to theory in general, a process, which Glaser (1978) termed as 'theoretical sensitivity'. Such sensitivity towards the data requires a researcher to be both analytical and competent in analysis.

#### **4.4 Research Quality**

Data analysis cannot be seen as a neutral activity (see section 4.2.2).

Silverman (1993) observes that,

"...no hypotheses are ever 'theory free'. We come to look at things in certain ways because we have adopted, either tacitly or explicitly, certain ways of seeing. This means that, in observational research, data collection, hypothesis-construction and theory-building are not three separate things but are interwoven with each other."

(1993:46)

Guba *et al.*, (1981) suggest that because of this lack of neutrality, four main concerns need to be addressed in research around trustworthiness of the work. These are associated with firstly, the value of truth. In other words how a researcher establishes confidence in the 'truth' of the analysis and key findings. Secondly, they discuss how the results of findings may be useable in other contexts or environments or with other subjects, which they term as 'applicability'. The third concern is around the 'consistency' of the research. In other words, if another scholar were to carry out the research with a similar group using a similar research design, they would achieve similar results. The last areas of concern they term as 'neutrality', by which they refer to the extent a researcher can demonstrate the work is devoid of biases, interests or motivations from the inquirer or other external forces. In positivist research, terms such as reliability, validity, generalizability and objectivity are used to explain and defend the acceptability or trustworthiness of research in light of human fallibility.

However, the processes to which these terms refer are inappropriate in more naturalistic research, which is dependent on time, place and context (Mruck *et al.*, 2007). For example, Le Compte *et al.*, (1993) suggest that testing reliability in qualitative research is problematic due to the unique and idiosyncratic nature of the research context. Moreover, objectivity, which can be described as keeping the phenomenon of study external from the researcher, is neither possible nor desirous in constructivist grounded theory, as the relationship between researcher and participant is crucial in theory generation.

#### **4.4.1 Credibility, Transferability, Dependability and Confirmability**

Guba (1981) puts forward an alternative set of processes to address the four main concerns associated with the trustworthiness of research.



These are:

- credibility (to address 'truth value')
- transferability (to address 'applicability')
- dependability (to address 'consistency')
- confirmability (to address to 'neutrality')

(1981:80)

These terms are supported by other authors, for example, Miles *et al.*, 1994; Gasson, 2003; Shenton, 2004; Denzin, *et. al.*, 2005.

Credibility, sometimes referred to as 'valid authenticity' (Guba *et al.*, 2007), refers to the extent to which the research is sufficiently authentic, either corresponding or similar to some reality which enables the researcher to carry out the data analysis with confidence and trust. Dependability, sometimes referred to as auditability, (Gasson, 2003), addresses the issue of consistency in the research. To some extent, Lincoln *et al.*, (1985) argue that it is linked with credibility. If credibility is demonstrated, they suggest that to some extent, dependability is also evident. From a social constructivists' viewpoint, Shenton (2004) argues that the phenomena under investigation is tied to a situation so that the notion of consistency is problematic to assert. However, clear and repeatable procedures relating to both the research process and an articulation of the position a researcher takes during the process, can go some way to establishing dependability.

Transferability refers to the applicability of the research to other more generalizable contexts. There are some (Erlandson *et al.*, 1993), who argue that the transferability of research in naturalistic research is not possible as "all observations are defined by the specific contexts in which they occur" (1993:69). Indeed, constructivist grounded theory research is both interpretive and subjective and it is therefore questionable how generalizable it can be. However, other authors (Denscombe, 2002; Stake, 2007) suggest that although the research context may be unique, it is part of a larger context and therefore cannot be dismissed.

Gasson (2003) suggest that to overcome this conundrum,

“...claims for transferability and fit between contexts must therefore arise through identifying similarities in factors that are part of the theoretical model, that are consistent between different contexts for which the theory fits.”

(2003:92)

Confirmability relates to the extent, which a researcher can remain objective or neutral in the research process. The neutrality of the researcher in constructivist grounded theory is problematic as the researcher and context are interrelated. Guba *et al.*, (1989) suggest that in constructivist grounded theory, it is “impossible to separate the inquirer from the inquired into. It is precisely their interaction that creates the data that will emerge from the inquiry” (1989:88).

To a large extent, credibility, transferability, dependability and confirmability can be negotiated by adopting a constant process of reflexivity. According to Gasson (2003), in grounded theory, reflexivity requires the researcher to be self-aware both in terms of prejudices, biases and motivations in relation to the processes of data collection and analysis, as well as in relation to affecting the social context of which the researcher is a part. Some authors, (Gasson, 2003, Shenton, 2004) have suggested certain steps to ensure that credibility, transferability, dependability and confirmability are addressed in grounded theory. Table 4.2 demonstrates how they are addressed in this research study.

Credibility	Transferability	Dependability	Confirmability
1. Articulation and use of appropriate methods 2. Triangulation 3. Independent judgement 4. Thick description 5. 'Openness' of research process with subjects 6. Reflexivity, specifically in memoing, analysis and interpretation	1. Theoretical sensitivity 2. Literature Review 3. Discussion in chapters 7 and 8. 4. Reflexivity	1. Triangulation 2. Articulation and use of appropriate methods 3. Reflexivity	1. Articulation of researchers' past experience 2. Reflexivity specifically in data collection, analysis and interpretation 3. Triangulation 4. Articulation and use of appropriate methods 5. Use of appendices to enable scrutiny of research

Table 4.2: Accounting for academic rigor in this PhD study

#### 4.4.2 Triangulation and Independent Judgement

At a simple level, Cohen *et al.*, (2011) describe triangulation as the process by which two or more methods are employed to collect data in order to provide validity to the categories generated and it is also one of the methods for demonstrating credibility, dependability and confirmability (see section 4.4.1). In particular the process of triangulation can provide a more 'truthful' representation or interpretation from the analyses of different collection methods, of what is going on in the research context. However, according to Gibson (2007), the notion of triangulation remains underdeveloped in grounded theory methodology, in spite of the potential contribution to promote academic rigour.

Another way to ensure research quality is to engage an independent judge to act as a critical friend in reviewing the data collected, analysis and interpretations. According to Costa *et al.*, (1993) a critical friend is someone who provides an alternative lens through which to view the data, asking provocative questions and offering reflective feedback on the research. During this research, independent judgement was sought from a colleague who is familiar with grounded theory methodology. They were asked to review the data collection and analysis from Cycle III and reflect upon the findings

presented in Chapter 7 (see section 7.8).

#### **4.4.3 Researcher Bias and Positionality**

According to Gibson (2007), a central debate in grounded theory is associated with the position of the researcher in the context of the research. Rhoads (1997) suggests that positionality can be defined as the “social position of the knower, i.e. the class, race, gender, sexual orientation, etc. of the knower” (1997:480). All those involved in the research come from a position and the researcher needs to be self aware of this in grounded theory. Moreover, they should be aware of how this might limit his or her ability in the data collection and analysis process and also how it might lead to bias more generally in the research process. In this research, the researcher, as well as studying ELvis in a PhD context, is also a participant in the ELvis project as an unpaid team member with a role of supporting the teaching team informally, advising them and carrying out some of the evaluation tasks required by ELvis.

This dual relationship can be viewed as both positive and negative (Burgess, 1984). Charmaz (2005) suggests that in constructivist grounded theory researchers need to stay close to the context they are investigating and have a good relationship with the participants of the research. This dual relationship as a participant researcher and as voluntary team member has fostered such a relationship. However, it can be argued that neutrality is put at risk in such a situation. Pelto and Pelto (1978) have called this “going native” (1978:69). In a transnational project, the researcher also needs to be aware of her own cultural position and steer clear of an ‘islander mentality’. In order that academic rigour has been maintained, a variety of data collection methods have been employed (see section 4.4.1).

#### **4.4.4 Research Design Limitations and Challenges**

According to Bryant *et al.*, (2007) the relationship between the researcher and the data is founded in action, interaction and interpretation leading to meaning making. The researcher needs to be aware of these processes so as not to

reify data. There is a danger that researchers can over emphasize the role of data, thus there is importance in things such as “imagination, serendipity, ‘abduction’ and reflexivity” in grounded theory methodology (2007:15).

#### **4.5 Ethical Approach**

Ethics in research has grown out of an historical journey from a time when we began to realize the notion of ‘autonomous self’ (Denzin *et al.*, 2005). As social research does not take place in isolation, separate from the subjects and instances under investigation, so there is an ethical and moral obligation to be aware of issues, which might affect those involved in the research. Moreover, it is necessary to negate these issues where at all possible (Cohen *et al.*, 2003). It is therefore imperative that at the outset of any social research, ethical considerations are given to the study as a whole and that these are revisited throughout the course of the research, (Robson, 2004). Most research is underpinned by four ethical guiding principles: Informed Consent; Deception; Privacy and Confidentiality; Accuracy. As this research is following a grounded theory approach, research might follow an unplanned path, led by emergent data. It was therefore necessary to be mindful of the ethical and moral issues throughout the whole of this study.

A number of authors (Denscombe, 2002; Cohen *et al.*, 2003; Robson, 2004) touch on a central dilemma inherent in the domain of ethics and research - that being the ‘cost/benefit’ relationship. By this they mean the pursuit of knowledge or truths set against the rights of the subjects under investigation. On the one hand, many if not all, social research studies have pressures placed upon them from either funders, project partners or from the researchers own intentions and desires to follow a particular path. These have to be balanced against the rights of those who are the subject of the research. These rights can cover such things as freedom from prejudice, dignity, self-esteem and the right to privacy (BERA, 2011).

However, others (e.g. Denzin *et al.*, 2005) argue that the cost/benefit model is incongruent to the “empowering, participatory model of research that many

people are now advocating” (2005:38). For such a model to be successful it requires that one creates both a respectful and reciprocal relationship between the researcher and those whom one is studying. With regards to this study, a relationship has been built in advance of carrying out the research. This involvement has taken the shape of the researcher offering expertise and carrying out small-scale support as a volunteer. Through this process, trust has been built between the researcher and the ELvis members.

#### **4.5.1 The Researchers’ Role**

According to Mills *et al.*, (2006a) little acknowledgement has been given in the past to the researcher/participant relationships. However, constructivist grounded theory requires a partnership between the participants and the researchers as together they construct meaning from their stories into a grounded theory. As the relationship between researcher and participant is crucial in constructivist grounded theory, data was mainly collected during the regular face-to-face meetings that take place throughout the academic year, rather than through the use of online methods.

Mills *et al.*, (2006a) suggest that constructivist grounded theory requires:

- The creation of a sense of reciprocity between participants and the researchers in the co-construction of meaning and ultimately a theory that is grounded in the participants’ and researcher’s experiences;
- The establishment of relationships with participants that explicate power imbalances and attempts to modify these; and,
- Clarification: the position the author takes in the text, the relevance of biography, and, how one renders participants’ stories into theory through writing.

(2006a:3)

Strauss, having moved away from the objectivist stance of Glaser, articulated a more constructivist presentation of the relationship between the research and the participant. Strauss *et al.*, (1994) suggest that there is a co-construction of meaning during an “interplay between researcher and the actors studied” (1994:280).

The nature of this research is to involve others and as such our society dictates a moral obligation to be ethical in so doing. Cohen *et al.*, (2011) point out that any research is an intrusion into the subjects' world. However, in ELvis, "All participants will be researchers, building knowledge and recording their progress for the benefit of others in their schools and globally" (ELvis website, 2014:online). So there is an expectation that the research will be taking place and the consequences of this are understood.

#### **4.5.2 Participant Consent and Anonymity**

Before research can begin, informed consent has to be sought. This can be done in a number of ways, both written and verbal. Because of a variety of factors, such as the different cultures that are involved in this study, its online nature, the asynchronicity, the distributed leadership and philosophical approach of the project, this research project has been presented and discussed at length at two separate ELvis meetings - one containing students and teachers and one containing teachers, co-ordinators and managers. In discussions with the group, it was stated that all findings would be shared with them and that feedback from them would be sought, that they could withdraw at anytime, that the responses to any questionnaires and interviews would be treated in confidence and would be anonymized. After discussions with them, they had three days to talk as a group, and come back with any further questions for clarification before voting on whether they were happy to participate in the research. They were all in agreement, as long as the researcher was self-funding, to which I agreed.

Consent has been thus been negotiated through discussion and consensus and given verbally by the participants. Although this kind of framework is not common in western academia, it has currency in such indigenous contexts as Kaupapa Maori (Bishop, 2005), where researchers are also participants in the context being researched. This co-relationship shares some similarities to the participant researcher approach found in a constructivist grounded methodology. It could be argued that this is a refreshing and more relevant

position to take in relation to informed consent. Furthermore, Denzin *et al.*, (2005), in a discourse about biomedical ethics, suggests that an informed consent form does not necessarily guarantee respect.

According to university policy, this verbal approach was used in combination with the more western recognised process of information sheets and consent forms. The ELvis project co-ordinators have complied, filling in the consent forms only for the purpose of the researcher gaining the necessary paperwork for university regulations, rather than as something they see as necessary in the context of this research.

#### **4.5.3 University Ethics Approval**

Specific ethical issues associated with this research were covered in the university ethics approval process, the key elements of which are presented in this section.

1. Constructivist grounded theory - because of the nature of this research method, the researcher must ensure that the research remains 'visible and open to suggestions from others' (Winter, 1996, cited in Denscombe, 2002:63). This has been made possible through the VLE where an online research community has been set up. Findings as they emerge will be posted in here and feedback and comment sought from the participants.

2. Misrepresentation - in order that the opinions of others are not misrepresented, transcriptions will be shared for participants to comment upon with regards to accuracy and meaning.

3. Protecting the identities - it is possible that in some instances, in order for data to make sense, it must be seen in the context of the situation and this may be enough to give away the identities of individuals, to those who are familiar with the context. In this situation, participants will be made aware of this dilemma and approval sought to include the data. Where they ask for this not to be included, the data will be omitted.



4. Interpretation and presentation of data - the results of any data collection will need to be analyzed and interpreted and then presented back to the ELvis team to help in trust building and to support the team in their endeavours. This is a great responsibility, which is fraught with obstacles. For example, it needs to be presented in an academic manner for the PhD thesis on the one hand and in an accessible way to be understood and relevant for the ELvis participants on the other. Moreover, it may be that the participants do not like the findings that are generated, choose to ignore them or disagree with them. The findings might present the situation under investigation in a way participants may prefer not to see. In any circumstance, the presentation of the data to the ELvis audience will need to be carefully managed so as not to offend but to offer a way forward for development. A process of clarification and negotiation with the participants must be maintained throughout the research.

5. Conflict of interests - there are numerous partners involved in ELvis (seven different schools, ITS Learning, EU Grant funders, the University of Bedfordshire, the researcher). It might be that there are conflicts between different groups on what they permit and don't permit for inclusion. In this instance negotiation with all parties will be necessary, carried out with sensitivity in order to resolve any issues. Where resolutions cannot be found then a different course will be pursued.

6. Participant researcher (written in the first person according to Mills *et al.*, 2006a – see section 1.6.1) - I am also a participant researcher. In other words I am not only researching the nature of ELvis, but I am embedded into the project by acting as a volunteer to help projects run smoothly. I must therefore make sure that the expectations placed upon me in both my different roles are fully understood by the participants. I will do this *via* face-to-face meetings and *via* the research project area I have set up in the ELvis online community. I will also need to be mindful of the role participants have in contributing to the research, as they have a vested interest in showing the project in a good light as well as in finding out how to improve their practices.

7. Ownership - as others will be invited to comment on this research, it may be that opinions and expertise of others are woven into any research outputs that are created. These will be checked over for accuracy by the source, who will be fully acknowledged in any papers or presentations that result from this work. Through a Lifelong Learning Grant, funded by the EU, ELvis is required to make available all findings from any research undertaken during the funding cycle of the Lifelong Learning Grant. These findings once approved by all the participants will be made available on the ELvis website: <http://www.elvischool.eu/> under a Creative Commons License.

#### **4.6 Summary**

This chapter has set out the methodological approach used in this research. After giving a brief overview, the interpretive paradigm and constructivist grounded theory approach were discussed. Following this, an explanation was given on the selected research methods, including a discussion on the research quality, limitations and ethical considerations. The next chapter will present the analysis of data from Cycle II (Identification of Key Themes) of the research, followed by a discussion of the findings.



## **Chapter 5 - Cycle II (Identification of Key Themes): Presentation and Discussion of Findings**

### **5.1 Introduction**

This chapter presents the data that emerged out of Cycle II (Identification of Key Themes) of research, followed by a discussion of the findings. Data from Cycle I (Pilot Study) were presented and discussed in Chapter 2 and data from Cycle III (In Depth Exploration of Key Themes) are presented and discussed in Chapter 7 of this thesis. The purpose of the Cycle II data collection, as demonstrated in Figure 5.1, was to explore the process of pedagogic shift in the context of a virtual international school and in so doing, identify key themes, which might inform a model of pedagogic shift. These purposes are in light of the new research questions, which emerged out of the literature review. From the interrogation of the Cycle II data, an initial model of pedagogic shift has emerged and this is discussed in detail in Chapter 6.

### **5.2 Data Collection**

Cycle II contains two different data collection phases, as shown in Figure 5.1. Cycle II / Phase I consisted of the original raw data collected during Cycle I (Pilot Study), which was designed to investigate the major factors contributing to pedagogic shift in a virtual international school. The method of collection is fully discussed in section 2.2. The data from Cycle I (Pilot Study) yielded findings that showed pedagogic shift was not occurring (see section 2.5), which led to a literature review and a change in the research questions for the main study. To ensure coherence with the new research focus the Cycle I (Pilot Study) raw data were re-coded in light of the new research questions to

see if new insights could be found.

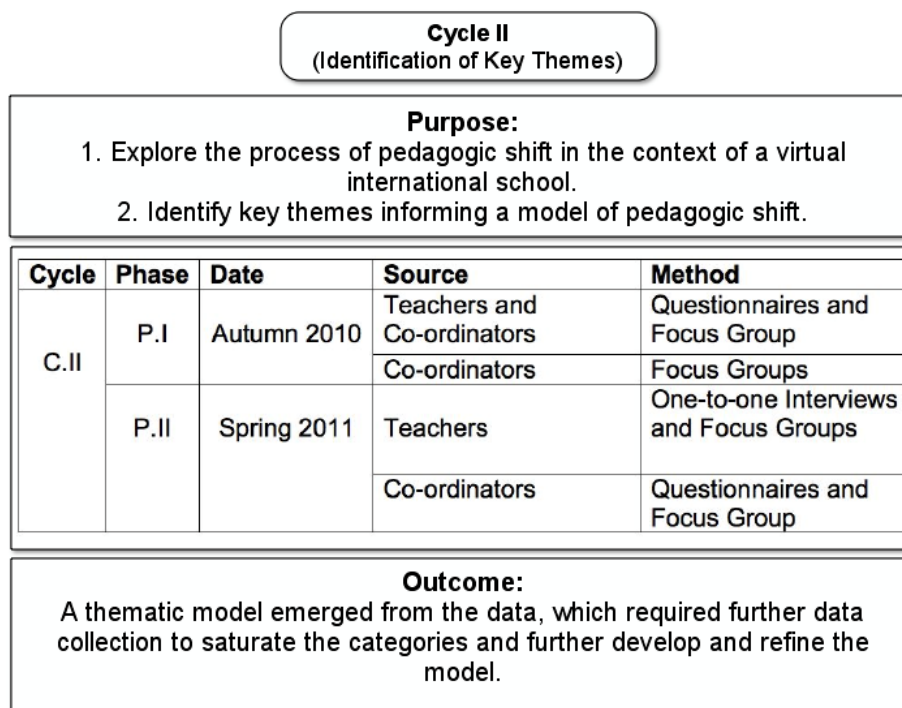


Figure 5.1: Summary of Grounded Theory Research Cycle II (Identification of Key Themes)

The Cycle II / Phase II data were collected at the end of the ELvis 1.0 funding term in the late spring of 2011. Data collection consisted of one-to-one interviews (see Appendix 3), and focus group discussions (see Appendix 4) with teachers. As part of the end of funding evaluation process, data were also collected from ELvis co-ordinators through a questionnaire (see Appendix 5), which was then used as the basis of a focus group discussion.

All data from both phases, were transcribed into rich text format files and then analysed using hyperResearch software, (section 4.3.3).

### 5.3 Presentation of Cycle II (Identification of Key Themes) Data

The following tables (Tables 5.1 to 5.12) indicate the initial categories (e.g. Assessment) and codes (e.g. 'assessment – general'), which emerged out of the coding process for all qualitative datasets during Cycle II, along with the frequency that each code is detected. Twelve different categories have

emerged from the Cycle II data collection, containing fifty-seven different codes and are presented here (sections 5.3.1-5.3.12) in alphabetical order, including: Assessment; Beliefs, Attitudes and Values; Community; Curriculum; Evaluation; Inquiry Process; Leadership; Project Design; Student Activity; Support Systems; Teaching Practices; Technology. The category titles have been kept open (e.g. ‘Community’ as opposed to ‘Community Working’ or ‘Community Learning’) to enable all related codes to be placed within. As a result, some codes appear in more than one category, as aspects of the code were relevant to more than one category. However, this was necessary to enable relationships between codes and categories to emerge. Under each table, there are examples of the kinds of comments that were being made, with initial memos and a discussion on how codes were then regrouped as a result of similarity in phrases and relationships between the initial codes. These data aided in the answering of both research questions and enabled the identification of key themes in an initial thematic model of pedagogic shift for use in virtual international schools. Only the most frequently occurring codes are presented as examples, with the remainder located in Appendix 6.

### 5.3.1 Assessment

Assessment Category	Frequency of Codes		
	Phase I	Phase II	Total
Codes:			
Assessment – general	2	11	13
Student Learning (non-assessed)	0	12	12
Quality of Student Work	1	4	5
Collaborative Learning	0	5	5
Teacher Assessment	1	4	5
Peer Review	0	4	4
Non-assessment	0	2	2
Reward	0	1	1
<b>Totals</b>	<b>4</b>	<b>43</b>	<b>47</b>

Table 5.1: Frequency of code detection in the emerging category of Assessment, during Cycle II

Example quote regarding Assessment: “Formal accreditation has not been important in our school”

MEMO related to this code: Why is this? Is this the same for all schools? Search in the data for any other similarities or difference between schools.

During the Cycle II / Phase I data analysis, there were four comments made in codes associated with the Assessment category. These were either related with ‘general assessment’ comments (n=2), the ‘quality of student work’ (n=1) or ‘teacher assessment’ (n=1).

During the Cycle II / Phase II data analysis, over half the comments were coded as either ‘non-assessed student learning’ (n=12) or ‘general assessment’ (n=11). The comments concerned with ‘student learning’, described either learning about content such as vocabulary in a foreign language or about skills, for example, “they learned to parlez with the other students from the other countries”. The ‘general assessment’ comments included, for example, “Kids seem to be still in the old school working for marks and grades that will get them to the next level without necessarily learning as much as they could, this [intruding new assessment methods] is going to be a slow process in our school.” There were similarities between the comments made in the Assessment category and the comments in the Student Activity category (see section 5.5.1).

### 5.3.2 Beliefs, Attitudes and Values

Beliefs, Attitudes and Values Category	Frequency of Codes		
	Phase I	Phase II	Total
Codes:			
Time	14	5	19
Teacher Perceptions	4	14	18
Teacher Motivations	2	6	8
<b>Totals</b>	<b>20</b>	<b>25</b>	<b>45</b>

Table 5.2: Frequency of code detection in the emerging category of Beliefs, Attitudes and Values during Cycle II

Example quote regarding Beliefs: “Teaching with or rather using action research takes more time to cover topics”

MEMO related to this code: Why do they believe this? What is their perception of time? What does action research mean for them? Relate this phrase to the Inquiry Process category.

During Cycle II / Phase I, there were twenty comments coded in the Beliefs, Attitudes and Values category. The majority of comments were coded as ‘time’ (n=14) with a typical example being, “I just didn't have the time to look at other nice little features like wikis or like surveys.” During Cycle II / Phase II, there were twenty-five comments coded in the Beliefs, Attitudes and Values category, fourteen of which were coded as ‘teacher perceptions’. An example comment was,

“In the ELvis project, the, err, Ash said it, we had a dream. I think we have it still, the dream, but we point in very much dimension in the future and we don’t have this future just now [laugh] we still have a dream” (Pine).

Data associated with the Beliefs, Attitudes and Values category are discussed in section 5.5.4.

### 5.3.3 Community

Community Category	Frequency of Codes		
	Phase I	Phase II	Total
Codes:			
Collaboration	3	8	11
Communication	4	5	9
Working with teachers	1	7	8
Working alone	1	3	4
Face-to-face teachers	0	2	2
Relationships	0	2	2
Co-operation	1	1	2
<b>Totals</b>	<b>10</b>	<b>28</b>	<b>38</b>

Table 5.3: Frequency of code detection in the emerging category of Community, during Cycle II

Example quote regarding Community: “We have built good relationships and



a framework for learning.”

MEMO related to this code: This does not mention how relationships have been built e.g. online or face-to-face. Look for evidence of this elsewhere. Although they have ‘a framework for learning’ (the project template), there is little evidence of its use anywhere. Where it has been used, it has been superficial.

During Cycle II / Phase I, there were ten comments coded in the Community category. Most of the comments were either coded as ‘communication’ (n=4), for example, “What was successful about your project? International communication” or ‘collaboration’ (n=3).

During Cycle II / Phase II, there were twenty-eight comments coded in the Community category. The majority of comments in this phase were coded either as ‘collaboration’ (n=8), ‘working with teachers’ (n=7) or ‘communication’ (n=5). The statements regarding collaboration highlighted lack of expertise at collaborating online and the challenges associated with this. An example of a comment coded ‘working with teachers’ was, “[teachers] should leave their egos behind”. This comment also relates to the Beliefs, Attitudes and Values category.

In analysing the data in this category, overlaps emerged between codes in this Category. Therefore the initial codes were reviewed, focusing on firstly the teachers (e.g. ‘working with teachers’, ‘alone’, ‘face-to-face’, ‘online’ and ‘relationships’) and secondly on processes of community building (e.g. ‘communication’, ‘collaboration’, ‘co-operation’). The findings arising from this are discussed in detail in section 5.5.4 of this chapter.

### 5.3.4 Curriculum

Curriculum Category	Frequency of Codes		
	Phase I	Phase II	Total
Codes:			
Student interest	6	14	20
Curriculum fit	9	11	20
Funding	0	1	1
<b>Totals</b>	<b>15</b>	<b>26</b>	<b>41</b>

Table 5.4: Frequency of code detection in the emerging category of Curriculum, during Cycle II

Example quote regarding Curriculum: “They [the students] said they didn't want to do that because it wasn't part of their curriculum and they thought it was something extra that the teacher wanted them to do.”

MEMO related to this code: This is also about student motivations and perceptions.

During Cycle II / Phase I, there were fifteen comments coded in the Curriculum category. The majority of these were associated with ‘curriculum fit’ (n=9), for example, “It was an extra, not integrated into the curriculum, so it took extra time. This should be a part of the normal curriculum”.

During Cycle II / Phase II, there were twenty-six comments coded in the Curriculum category. Of these, over half the comments were about ‘student interest’ (n=14), for example, “They enjoyed also doing something that was a little bit different.”

Data associated with the Curriculum category are discussed in section 5.4.1.

### 5.3.5 Evaluation

Evaluation Category	Frequency of Codes		
	Phase I	Phase II	Total
Codes:			
Informal reflection	9	13	22
Success of projects	10	11	21
Stages of development	0	4	4
Suggested task	0	2	2
<b>Totals</b>	<b>19</b>	<b>30</b>	<b>49</b>

Table 5.5: Frequency of code detection in the emerging category of Evaluation, during Cycle II

Example quote regarding Evaluation: “We are also in the first steps of the solar panel project ... it’s also the first steps for the development and the co-operation [which is] much more important [than the solar panel scientific results].”

MEMO related to this code: this highlights a teacher’s perception of stages of development and where this teacher thinks they are on the development journey.

During Cycle II / Phase I, there were nineteen comments coded in the Evaluation category. Of these, ten were coded the ‘success of projects’, three of which highlighted the lack of success, for example, “We still don’t know what needs to be in place for a course project to be successful.” There were nine further comments coded as ‘informal reflection’, for example, “It was rewarding and improved the relationship between students and teachers.”

During Cycle II / Phase II, there were thirty comments coded in the Evaluation category. Most of these were coded as either ‘informal reflection’ (n=13), for example, “We need to reflect on the way students can really collaborate online”, or the ‘success of projects’ (n=11), for example, “the most successful projects run in a foreign language”.

Data associated with the Evaluation category are discussed in section 5.5.4

'Evaluation, Reflection and Inquiry'.

### 5.3.6 Inquiry Process

Inquiry Process Category	Frequency of Codes		
	Phase I	Phase II	Total
Codes:			
Research	1	9	10
Distorting dilemma	0	2	2
Experimentation	0	1	1
<b>Totals</b>	<b>1</b>	<b>12</b>	<b>13</b>

Table 5.6: Frequency of code detection in the emerging category of Inquiry Process, during Cycle II

Example quote regarding Inquiry Process: "If we have done action inquiry or inquiry-based learning it is only been done unconsciously."

MEMO related to this code: Inquiry Process needs to be a conscious activity if it is to have value. Do teachers share a common understanding of action inquiry of inquiry-based learning?

During Cycle II / Phase I, there was only one comment coded in the Inquiry Process category and that was in relation to 'research'.

During Cycle II / Phase II, there were twelve comments coded in the Inquiry Process category. Of these, nine comments were coded as 'research', for example, "Teaching with or rather using action research takes more time to cover topics".

Data associated with the Inquiry Process category are discussed in section 5.5.4 under the heading 'Evaluation, Reflection and Inquiry'.

### 5.3.7 Leadership

Leadership Category	Frequency of Codes		
	Phase I	Phase II	Total
Codes:			
Involving teachers	9	12	21
Project management	1	13	14
Management	2	7	9
Stakeholders	1	2	3
Decision making	1	1	2
<b>Totals</b>	<b>14</b>	<b>35</b>	<b>49</b>

Table 5.7: Frequency of code detection in the emerging category of Leadership, during Cycle II

Example quote regarding Leadership: “Everybody says that the head teacher backing is key to project success.”

MEMO related to this code: This relates to many codes. What does head teacher backing mean in practice? Is it the same across all schools?

During Cycle II / Phase I, there were fourteen comments coded in the Leadership category. The majority of these were coded as ‘involving teachers’ (n=9), for example “Give the teachers space and time to experiment and develop new didactical methods”. (This was also coded ‘experimentation’).

During Cycle II / Phase II, there were thirty-five comments coded in the Leadership category.

Of these, twenty-five comments were coded as either ‘project management’, (n=13) for example, “I think it has been the management of the solar panel [project] which didn't work and the problem that it was very confusing” or ‘involving teachers’ (n=12), for example, “But that is the idea you have to implement into the heads of these colleagues”.

Data associated with the Leadership category are discussed in section 5.5.4.

### 5.3.8 Project Design

Project Design Category	Frequency of Codes		
	Phase I	Phase II	Total
Codes:			
Teaching practice	23	39	62
Student tasks	12	23	35
Using the VLE	16	15	31
Setting up projects	5	24	29
Involving teachers	9	12	21
Success of projects	10	11	21
Tasks - general	0	11	11
<b>Totals</b>	<b>75</b>		<b>210</b>

Table 5.8: Frequency of code detection in the emerging category of Project Design, during Cycle II

Example quote regarding Project Design: “It all happened too fast and wasn’t planned.”

MEMO related to this code: Project set up. Look out for further evidence or lack of planning.

During Cycle II / Phase I, there were seventy-five comments coded in the Project Design category. Of these twenty-three comments were coded as ‘teaching practices’, for example, “Mediate between Italian and Dutch groups”. A further sixteen comments were coded as ‘using the VLE’, for example, “The solar data needs to be embedded in the wiki to make it easy.”

During Cycle II / Phase II, there were 135 comments coded in the Project Design category. Of these, thirty-nine were coded ‘teaching practices’, for example, “we should make clear that rules or a work plan should be very clear beforehand”. The second highest code was ‘setting up projects’ (n=24) for example, “we should make clear that rules or a work plan should be very clear beforehand”. A further twenty-three comments were coded as ‘student tasks’ (n=23), for example, “we had one discussion area where they could have some social talk, where they could introduce themselves etc ”.

Data associated with the Project Design category are discussed in section 5.5.2.

### 5.3.9 Student Activity

Student Activity Category	Frequency of Codes		
	Phase I	Phase II	Total
Codes:			
Student tasks	12	23	35
Student motivation	8	22	30
Self organisation	5	11	16
Face-to-face students	3	9	12
Student collaboration	2	10	12
Student communications	5	6	11
Tasks – general	0	11	11
Learning about technology use	4	5	9
Quality of student work	1	4	5
Peer review	0	4	4
Self conscious	0	3	3
Numbers of students	0	1	1
<b>Totals</b>	<b>40</b>	<b>109</b>	<b>149</b>

Table 5.9: Frequency of code detection in the emerging category of Student Activity, during Cycle II

Example quote regarding Student Activity: “In the end one or two groups really collaborated, whereas the other groups created separate things. They just uploaded their things on the VLE.”

MEMO related to this code: Different students doing different things. Is this because of flexibility in design or because of something else?

During Cycle II / Phase I, there were forty comments coded in the Student Activity category. Half of these were coded as ‘student tasks’ (n=12), for example, “We need to give students clear tasks and more responsibility” or as ‘student motivation’ (n=8), for example, “A big challenge is how to keep all students motivated.”

During Cycle II / Phase II, there were 109 comments coded in the Student

Activity category. As with Cycle II / Phase I, the highest occurring codes were ‘student tasks’ (n=23), for example, “Then we had another area for discussion about work, that was the intention” and ‘student motivation’ (n=22), for example, “if they don’t get a reply then they lose motivation”.

The codes of ‘self organisation’ and ‘tasks – general’ contained eleven comments each. An example from ‘self organisation’ was, “They [the students] had to organize the work in the group”. An example from ‘general tasks’ was “I think that they can just discuss first and then say have you done everything”.

Data associated with the Student Activity category are discussed in section 5.5.1.

### 5.3.10 Support Systems

Support Systems Category	Frequency of Codes		
	Phase I	Phase II	Total
Codes:			
CPD	2	10	12
Scaffolding teachers	3	3	6
Facilitation	0	1	1
<b>Totals</b>	<b>5</b>	<b>14</b>	<b>19</b>

Table 5.10: Frequency of code detection in the emerging category of Support Systems, during Cycle II

Example quote regarding Support Systems: “We need greater conversations between teachers and innovators, taking on questions about teaching styles.”  
MEMO related to this code: self-evaluative of possible knowledge/skill deficit

During Cycle II / Phase I, there were five comments coded in the Support Systems category. These were ‘scaffolding teachers’ (n=3) and ‘CPD’ (n=2).

During Cycle II / Phase II, there were fourteen comments coded in the Support Systems category. Of these, ten were coded as ‘CPD’, for example,



“We need more learning about technology software”.

Data associated with the Support Systems category are discussed in section 5.5.2.

### 5.3.11 Teaching Practices

Teaching Practices Category	Frequency of Codes		
	Phase I	Phase II	Total
Codes:			
General practices	23	39	62
Autonomy	6	5	11
Tasks – general	0	11	11
Working with teachers	1	7	8
Working alone	1	3	4
Scaffolding students	3	1	4
<b>Totals</b>	<b>34</b>	<b>66</b>	<b>100</b>

Table 5.11: Frequency of code detection in the emerging category of Teaching Practices, during Cycle II

Example quote regarding Teaching Practices: “It [teaching] was more student-centred and there was (of course) more emphasis on project work.”

MEMO related to this code: This teacher does not expand on what they mean by student centred. Search for any instances of other teachers talking about difference teaching styles.

During Cycle II / Phase I, there were thirty-four comments coded in the Teaching Practices category. Over half of these were coded as ‘general practices’ (n=23), for example, “We need to give students clear tasks and more responsibility. We need to teach them how to cooperate.”

During the Cycle II / Phase II analysis the majority of comments were also coded as ‘general practices’ (n=39), for example, “I gave them some supplementary informations, like vocabularies, things like that”.

Data associated with the Teaching Practices category are discussed in section 5.5.2.

### 5.3.12 Technology

Technology Category	Frequency of Codes		
	Phase I	Phase II	Total
Codes:			
Using the VLE	16	15	31
VLE issues	15	6	21
Learning about technology use	4	5	9
Non / little use of the VLE	1	6	7
Access	4	1	5
ICT	1	3	4
Facebook	1	3	4
Skype and emails	0	3	3
<b>Totals</b>	<b>42</b>	<b>42</b>	<b>84</b>

Table 5.12: Frequency of code detection in the emerging category of Technology, during Cycle II

Example quote regarding Technology: “The most important aspect is the use of the VLE. There is contact between students and teachers by their VLE. The problem with this is that it is not so easy to arrange a time when all students of different schools [meet] up on this VLE to have a discussion.”

MEMO related to this code: This demonstrates a limited understanding on what the VLE can do. In other words, they see it as a synchronous tool.

During Cycle II / Phase I, there were forty-two comments coded in the Technology category. Of these, just over a third were coded as ‘using the VLE’ (n=16), for example, “Coordinators need to be better about posting dates in the VLE diary so we all know when we can meet”. A further fifteen were coded as ‘VLE issues’, for example, “There have been some technical problems.”

During Cycle II / Phase II, there were also forty-two comments coded in the Technology category, fifteen of which were coded as ‘using the VLE’, for example, “it has started with ice breaking discussion area”.

Data associated with the Technology category are discussed in section 5.5.3.

### 5.3.13 Quantitative responses

The questionnaires contained two questions, which could be quantitatively analysed (section 4.3). The first quantitative question asked how well co-ordinators thought that the ELvis 1.0 objectives had been met. The responses are outlined in Table 5.13.

<b>Objective</b>	<b>Yes</b>	<b>No</b>	<b>In Part</b>
To improve the quality of and to increase the volume of mobility involving pupils and educational staff in different member states	2		6
To improve the quality and to increase the volume of partnership between schools in different member states	3		5
To encourage the learning of modern foreign languages	5	1	2
To support the development of innovative ICT based content, services, pedagogies and practice in lifelong learning	1		7
To support improvements in teaching practices and school management		4	4

Table 5.13: Co-ordinators' Responses on ELvis 1.0 Objectives

The majority of responses associated with whether or not the objectives of ELvis had been met, fell into either the Yes (n=11) or In Part (n=24) categories, with only five indicating that some of the objectives had not been met.

The second quantitative question asked how well co-ordinators thought that ELvis aims had been met. The responses are outlined in Table 5.14.

<b>Aim</b>	<b>Yes</b>	<b>No</b>	<b>In Part</b>
To find a way to reach a deeper more enduring collaboration between the partner schools	2		6
To develop a change in approach to teaching and learning to one which is more appropriate to the 21 <sup>st</sup> century		1	7
To reach this through action research and inquiry based learning by teachers and students		2	6
To encourage a more enterprising and creative approach to learning by teachers and students		2	6
To exploit technology to eliminate or reduce barriers to learning and collaboration		1	7
To create an international virtual learning environment to enable us to do all this. We said that this would be the 'binding factor' as students and teachers 'collaborate online'		1	7
To find a way of getting the work that is done, accreditation in the schools and if possible by 'awarding bodies'		2	6

Table 5.14: Co-ordinators' Responses on ELvis 1.0 Aims

In this series of questions, asking whether or not the aims of ELvis had been met, responses mainly fell into the No (n=9) or In Part (n=45) categories, with only two indicating a yes response.

#### **5.4. Reflection on the Data Collection and Analysis Process**

This section reflects upon the process of data collection and analysis. Many of the codes used in the Cycle II data analysis appeared in more than one category. This was because the data collection is an emergent process and the same comments needed to be analysed from all viewpoints to cover any possible emerging categories. In the initial coding, some codes were too detailed, for example, those incorporating the word 'task' (student task, general task, teacher task, suggested task, non/ease of task) or 'VLE' ('using the VLE', 'non/little use of the VLE' and 'VLE issues'). Whilst this level of detail

helped with the exploration of the meanings contained within comments, those same comments often had dual or even triple meanings. For example, “the VLE needs cleaning up and making more attractive to students” could be coded as a ‘teacher task’, a ‘suggested task’ as well as ‘VLE issues’ and ‘student interest’. Another example of similarities and overlaps was ‘self-organisation’, ‘student motivation’ and ‘student interest’. However, it was necessary to keep these multiple codings to prevent possible meanings from being ignored as the research progressed.

Coding of the Cycle II data took place at various times over nearly four weeks, which included breaks due to work commitments. In reviewing the coding in preparation for writing the discussion of findings, it became clear that there were variations in the way codes had been attributed to comments. As a result of this, the codes were all reviewed for accuracy over the space of three days to ensure that a consistent approach was finally used. During Cycle III, the time scale in which to complete the coding was reduced to negate this variance, although the codes were re-checked for accuracy before writing the discussion of findings and were viewed by the independent judge (see section 7.8).

In analysing the data in the Community category, overlaps emerged between the codes. Therefore the initial codes were re-organised focusing on either:

- a) Teachers and Community (e.g. working alone, working with teachers, either face-to-face or online and relationships)
- b) The Processes of Community Building (e.g. communication, collaboration, co-operation).

In reviewing the coding used in the Evaluation category, it became clear that there was considerable overlap in the codes. In particular, comments assigned to the ‘informal reflection’ code, should also be coded in accordance with the subject being reflected upon. For example, “there are too many places for discussions the threads need to be cleared out” is not only an ‘informal reflection’, but it is also about the VLE and should therefore be

coded as 'VLE issues'.

Rather than creating a problem, the issues that arose through the coding process and discussed in this section gave further insights into the data and added depth to the discussion on findings.

### **5.5 The Discussion of Findings Related to RQ1: Are curriculum design, teaching strategies and technology integration changing over time?**

This section presents the discussion of findings from Cycle II (Identification of Key Themes) in relation to the first research question, as follows:

In the context of a pan European virtual international school:

**RQ1.** Are curriculum design, teaching strategies and technology integration changing over time?

**RQ2.** What factors are inhibiting and/or contributing towards any change?

#### **5.5.1 Curriculum Design**

Throughout both phases of the Cycle II analysis, data emerged regarding curriculum design. During the Cycle II / Phase I analysis, data were found that highlighted issues with curriculum design, most of which were future tense, with teachers suggesting what they might do next time, for example, "Less open categories for the projects, tighter focus".

The data also demonstrated that most teachers believed that ELvis projects should fit into the curriculum of schools that make up the ELvis partnership. According to the model proposed by Vaughan *et al.*, (2006) within the curriculum design sphere, teachers are required to reflect upon the creation of course syllabus or outlines, which leads to a 'blueprint' for how courses are then remodelled. This was relevant for the context of their study, which was concerned with course redesign in Higher Education. However, in the ELvis distributed partnership of schools, there exist defined National Curriculums,

which teachers must deliver, limiting the amount of change teachers can make to the content of the curriculum. This impacted on how they viewed the work they undertook in ELvis. For example, curriculum fit became important for most of them because of time pressure, as suggested in this quote: “Because there is not enough time, you have to develop projects that can be integrated into the syllabus.”

It was unclear from this data, what the time pressures were. It could be associated with workload in schools, or the time it takes to design new content or other reasons. Although the data demonstrated that most teachers agree that projects should fit within the existing schools’ curriculum, they also commented on how difficult this has been so far, for example, one teacher noted how it was a challenge to fit, “...an ELvis project into the constraints of the required curriculum”.

The Cycle II / Phase I data analysis illuminated some reasons why ‘curriculum fit’ is perceived as an issue. For example, during the co-ordinator discussions it emerged that the common language of ELvis is English. The data suggested that the use of the English language prevents some teachers from participating in the projects, as their English language skills are too low to enable collaboration with other schools. When enough teachers from the distributed partnership of schools who are competent in the English language, agree to take part in a curriculum project, for example in geography, there are other barriers to fitting the ELvis project into the normal school curriculum. According to the data analysis, these barriers included the age groups of the students, which the teachers were teaching. For example, in one school, they might be twelve to fourteen years old, whereas in another school, they might be fourteen to sixteen years old. Although some studies (e.g. Lloyd, 1999) have shown that multi-age groups can have significant positive effects on learning, they also suggest that due to different age groups exploring topics at different levels of complexity, teachers have to differentiate more widely. The data from this research suggested that with this perceived complexity, ELvis teachers found it difficult to find an appropriate range of activities to hold the interest and motivation of all students. In conjunction with this, the data

suggested that different schools cover different topics at different times in the academic year. For example, one school might study plate tectonics in November, whilst another in March and another in May. All of these issues appeared to contribute to barriers to 'curriculum fit' even though the teachers mainly agreed that they should try and weave the projects into their curriculum.

The codes of 'student interest' and 'motivation' also appeared relevant to the concept of curriculum design. However, the analysis of data showed that when commenting on the loss of student interest or lack of motivation, teachers mainly talked about the general, rather than pointing to specific issues regarding curriculum design, as can be seen in this quote,

"Some students came back from the first meeting and gave me feedback that the project looked boring. I think more emphasis needs to be put on what they can get out of the project and get them more enthused about the whole thing" (Oak).

Specifically, the data demonstrated how teachers are influenced by student feedback when thinking about curriculum design. This may be relevant to the gap in research discussed by Hawkins *et al.*, (2010) regarding the changing nature of student - teacher relationships in virtual international schooling. However more data are needed to explore this further. Although the teacher in this quote has identified an issue with student motivation, they were unable to develop this line of inquiry in relation to the future curriculum design of ELvis projects.

During the Cycle II / Phase II analysis, the data demonstrated a mix of teacher opinions regarding curriculum design making the possibility of pedagogic shift problematic. For example in the data about 'student interest' there were opposing views regarding student engagement. One teacher said,

"Students have been keen to measure the Solar Panels ... they enjoyed also doing something that was a little bit different ... enjoyed building the solar panels ... like the practical element and that they are producing something that is tangible." (Spruce)



However, another teacher from a different school said, “people said, well it’s just taking measurements and more measurements and yet another measurement and yet another measurement.”

This data suggest that students and possibly teachers, have different expectations in how the curriculum should be designed, which potentially leads students from different schools engaging to greater or lesser degrees, depending on the design of activities in the curriculum. This was also true for the subjects where projects might ‘best fit’ as demonstrated in the following quote from a teacher about student interests:

“I don’t know why, but in a scientific school, they don’t particularly like science. Maybe they are fed up with the science and they want to do something different. They are usually more interested in cultural topics such as cultural differences.” (Beech)

If there are different expectations on curriculum design, it might be difficult for pedagogic shift to occur as collaboration between the teachers becomes more problematic unless these differences in expectations are discussed.

As with the Cycle II / Phase I data, the analysis in Cycle II / Phase II demonstrated the importance of curriculum fit if ELvis projects were to be successful, as shown by the following quote:

“I had young students, less than fourteen years old and they weren’t really prepared to work in the project ... they said they didn’t want to do that because it wasn’t part of their curriculum and they thought it was something else their teacher wanted them to do.” (Beech)

This quote also relates to the opinion of the students of a certain age. However data from other schools demonstrated the opposite, with teachers saying that their younger students were more interested in the projects than the older students. Indeed one teacher talked about how students were engaged enough to work outside of class in their own time as well as in class time.

There were other differences of opinion regarding the impact of student age on curriculum design, as highlighted by this teacher exchange:

Elm: With older students this works well with ICT, but it's harder with the younger students. Some students see the reasons for working this way whereas the others don't understand why we should work this way.

Ash: For me it is the opposite with age of students."

As well as these points being about curriculum fit and how this impacts on curriculum design, these data point to subtle differences in opinion which might be due to how teachers present projects to students, or in the differences in curriculum expectations in different schools and/or countries. If these differences are not explored within the group, it may be difficult for pedagogic shift to occur across the ELvis partnership.

In looking at what the data analysis said about teachers exploring different ideas on curriculum design, one teacher noted how,

"Some members are after soft outcomes like building relationships but we are looking for both soft - e.g. improved relationships of students across Europe and hard outcomes - e.g. students completing work across a large number of schools - quality outcomes." (Spruce)

The Cycle II / Phase II data also demonstrated how students from different schools appeared to be working at different academic levels in spite of being in the same age group. This potentially impacts on how the curriculum is designed. For example this teacher talks about working in a project called Pop Songs. He says of another school, that,

"They worked out the music parts better than our students, so there is a difference in their ability and in the assessment we have to vote for it, so maybe, so it's not on the same level, so that creates another problem too." (Mahogany)

In following up this comment, he said that the project was carried out by the schools during their languages classes, but the school where the students were of a higher level, also studied music lessons in their school, which is why

their work was of a higher level. In both cases, there was 'curriculum fit', one associated with a language lesson, one associated with a music lesson, however due to the context of the curriculum area being studied, there was a disparity in student achievement. This suggests that projects should be delivered within the same subject specialism, but as discussed at the beginning of this section, this is problematic due to language difficulties, age of students and curriculum match across the distributed partnership of schools. However one teacher suggested that it was beneficial if projects are designed to span different curriculum as teachers have the flexibility to do the project in whichever subject they choose and three others suggested that as language was a preventative issue in some curriculum areas, projects should run in Modern Foreign Languages, as demonstrated in this quote:

“Most projects have a place in the MFL as it is really hard to engage colleagues in other languages because of the language capacity of the non-language teachers.” (Beech)

However, the English school teacher noted that this was irrelevant to their school as English was not a foreign language for his students.

Some of the Cycle II / Phase II data associated with accreditation, were also relevant to the concept of curriculum design, with teachers suggesting that projects must become part of the school's curriculum, otherwise they cannot bring in accreditation – an aim of ELvis. The issue of accreditation in relation to curriculum design was discussed at some length after the questionnaires had been completed. Four of the teachers said that they gave some form of accreditation to their students for the work they do as part of ELvis, however a further two teachers said the opposite with one adding that for them, it is not important.

The data from Cycle II / Phase II also highlighted the importance of strategically planning the ELvis curriculum, with some teachers commenting that running too many projects at the same time was not conducive to project success.

The Cycle II / Phase I and II data suggest that there is a lack of teacher agreement on curriculum design. The differences of opinion were around accreditation, learning outcomes, what subjects are best suited for projects, whether the project content should match the schools' curriculums and the type of activities to include in the design.

Although these differences in opinion have been acknowledged, further discussion is needed between the teachers if common principles regarding curriculum design are to be agreed upon. The data also revealed a problem with 'time' although more research is needed to find out how this impacts on curriculum design leading to pedagogic shift. There were more data on curriculum design in Cycle II / Phase II, rather than Cycle II / Phase I, which is suggestive of more discussions between teachers on this aspect of the virtual international school.

### **5.5.2 Teaching Strategies**

During the Cycle II analysis, data emerged about teaching strategies, which are now discussed in this section. The main body of data that were relevant to teaching strategies, came from the Project Design, Student Activities, Support Systems and Teaching Practices categories.

During the Cycle II / Phase I data analysis, teachers appeared tentative in their responses related to teaching strategies throughout the questionnaires, the focus group discussion and the co-ordinators' focus group discussion. This could be for a variety of reasons, for example, ELvis had only been going for a year and most teachers had not had enough experience of running projects, or teachers had not built up enough trust between themselves to feel comfortable discussing issues around teaching strategies, or it might be that they lacked the knowledge on what teaching strategies are needed in a virtual international school.

An example of these tentative comments can be seen in the following quote, when a teacher discussed setting up projects, "[next time] better organisation

and preparation”. In this quote there is no identification of what could be improved upon. One teacher noted the success of incorporating icebreakers in the curriculum design. However, most of the comments were descriptive of tasks completed and some described challenges and possible future tasks. Few of them explicitly discussed tasks as part of a structured teaching strategy or project design concept. One teacher highlighted this, saying in the questionnaire response, “We still don’t know what needs to be in place for a course project to be successful”.

The comments associated with teaching tasks, were also relevant to the exploration of teaching strategies. Implicit in many of these comments was the inability of teachers to engage students with the projects. These barriers to student engagement varied from teachers not being able to get students to focus on tasks, to reflections on what teachers might do next time. In some instances teachers looked to the weaknesses of students, rather than examining their own teaching strategies, as highlighted in this comment from a teacher who had difficulty, “Getting the students focusing on useful tasks. Forcing the students to really work on something instead of only copying the first line in Wikipedia”.

Most of the comments raised general issues, rather than identifying specific teaching strategies, as highlighted by this quote, “the VLE needs cleaning up and making more attractive to students”. In this comment, there is an assumption that tidying the VLE will make students more likely to work there. The data did not yield clearly defined teacher tasks for engaging students.

In relation to student tasks, teachers implied that ELvis fostered more student-centred or independent learning, for example, “Automatically the students have to work more independently.” But as this comment shows, designing tasks to develop independent learning does not appear to be a conscious teaching strategy.

Within the data analysis, there was no evidence demonstrating how teachers explore teaching strategies, which scaffold student learning. Some challenges

to running projects more generally were discussed, for example, a few teachers reflected that projects to date, tended to be comparative between schools rather than collaborative across schools, noting that next time they must, “Find a way for students to work together ”. However, they did not identify what strategies they could employ to build collaboration into the project design.

When teachers talked about using the VLE in teaching, they tended to generalize, often suggesting future open-ended ideas relating to teaching strategies, for example, “[next time] use more applications available on the platform”. This comment demonstrates a desire to integrate technology into teaching strategies, without a clear rationale as to why or how the technology can be embedded or for what explicit purpose.

The data demonstrated how some teachers find it difficult to think about teaching strategies whilst also trying to learn about technology. However, five out of the thirteen teachers who filled in the Cycle II / Phase II questionnaires said that they had employed new teaching strategies, ranging from the type of work they set the students (more open-ended) to where they positioned themselves in face-to-face lessons (sitting with the students as opposed to standing at the front of the class).

The findings associated with teaching strategies from Cycle II / Phase I demonstrate how teachers were tentative, highlighting some issues with teaching strategies and making general comments about mainly future actions with minimal suggestions on how to shift their pedagogies.

During the Cycle II / Phase II analysis, there were a wide variety of data, which emerged about teaching strategies, which could be grouped as follows:

- Exploring teaching strategies, for example, “we need some steps in between, we can’t give them the VLE and say - so, you are responsible for your learning, you have to combine it with err used forms for responsibility”

- Changes in or new teaching strategies, for example “We have sown the seeds to changing our approach in teaching and learning.”
- Teaching strategies that are the same, for example, “This is normal in our school, we are going to push are students in this way”.
- General teaching strategies, for example, “I gave them some supplementary informations, like vocabularies, things like that”.

One teacher talked about how teachers are handing over some responsibilities to the students for learning. For example in the Pop Song project, the teacher created a framework, which she gave to all the students. These students then had to follow the framework. The co-ordinator from that school noted that,

“... [it] is very remarkable that we have done this development. So it is mixed in the responsibility. Students are not used to have the responsibility, just as we teach them forty-five minutes afterwards at the beginning of the lesson, err they try to do something other, in the middle they work a little bit, at the last they try not to get so much homework [laugh] and we have a lot to [do, to] change learning and teaching in another way.”(Pine)

However most teachers commented that these were only the first steps to finding appropriate teaching strategies, with some adding that the strategy used by the teacher running the pop song project, was very ‘labour intensive’ and ‘elaborate’. Some teachers noted that handing over the responsibility to students was difficult,

“I am not sure I am the controller. I like to see the results afterwards and then I can say its OK, but I can’t control the whole process and that’s erm new. I don’t know how to describe this feeling [laugh].” (Bay)

Again, this points to the changing relationship between teachers and students (Hawkins *et al.*, 2010). During the interviews, some teachers talked about the teaching practices of their own schools. For example, the School ID:7 talked about how they are moving towards a competency oriented learning curriculum and they see ELvis as a prototype for this kind of learning. However other schools felt limited by their own school context saying that,

“21st Century teaching and learning has not been achieved of course, also because we work in the 20th Century environments with small adaptations”. How the different teaching practices have impacted on teaching strategies used in the ELvis projects, were not explored by the teachers in the discussions or focus group. However one teacher did say that, “there is such a big difference, that I don’t think they [the students] can apply [laugh] what they are learning in ELvis to their ordinary lessons”. This has implications on not only the chosen teaching strategy but on the ability to fit ELvis projects into school curriculum. This teacher added that some students find it motivating to learn in the ELvis way, whilst other students didn’t really think it was actual education, rather it was, “something between education and entertainment - edutainment!”

Other teachers discussed a difference between learning in ELvis and learning in school, for example, “they have to communicate with the students from abroad so that makes it different”, there were also comments about how the teachers had found this difficult to implement.

As in the Cycle II / Phase I analysis, there were many comments from teachers that talked about the weakness of students, rather than teaching strategies that teachers could use to enable collaboration to happen, for example, “they should have collaborated online, but that was really the most difficult part because really they didn’t know how to do that”. However this same teacher did add, “Maybe we didn’t know either (laugh)”.

It was not clear whether this teacher saw this as the reason why students couldn’t collaborate, or whether this was just a comment on their own skill level. The data showed that teachers did not know how to address the issue of collaboration. Some teachers did acknowledge that they needed to introduce teaching strategies for supporting discourse amongst students, as shown here, “we must put in a process at some point”.

However, as with the Cycle II / Phase I data, this was future tense and lacked specific detail. Most of the comments on teaching strategies were general



reflections, for example, “There needs to be a way of embedding exchanges into the online environment so that they are not separate.” Teachers also talked about their lack of understanding regarding the teaching strategies they should use online. For example, one teacher said, “I thought that giving them the questions would have given them the structure, but they just didn’t pay attention to the questions, they just started chatting.”

One of the aims of ELvis 1.0 was to embed Action Research and Inquiry Based Learning into the curriculum design, however there was near complete agreement that this had, in the main, not happened as demonstrated by this comment, “If we have done action inquiry or inquiry based learning it is only been done unconsciously”. Some reasons were given for this lack of engagement, for example, “teaching with or rather using action research takes more time to cover topics”. The first quote also demonstrates a lack of understanding about action inquiry and inquiry based learning, which both require a conscious process.

In the analysis of Cycle II / Phase II data, regarding teaching strategies, there was some evidence of teachers acknowledging how teaching strategies had stayed the same, been explored or integrated into projects. Some of the comments discussed student weaknesses, whilst others explored general future actions, which ignored specific teaching strategies. In some instances, the data revealed insights on the changing nature of teacher-student relationships and the problems encountered within the distributed partnership of schools that make up ELvis. However, the data also revealed that most teachers are on the beginning of a journey, where they have articulated issues with new teaching strategies such as those, which are labour intensive.

### **5.5.3 Technology Integration**

The following discussion of the findings reveals how ELvis teachers have explored technology integration, from skills and strategies to the barriers and challenges. The findings can be split into two main areas, that which is associated with the use of the VLE and that, which is around the use of other

technologies.

During the Cycle II / Phase I analysis, the data demonstrated a variety of reasons why the VLE was not used, which could be grouped as follows:

- Students, e.g. “the VLE needs ... making more attractive to students”
- Teachers, e.g. “Learning to operate the VLE [was a challenge]”
- Superusers, e.g. “there have been some technical problems superusers have been ill so registration of the children could not be done”
- The software itself, e.g. “lack of collaborative / interactive tools on the VLE”
- Access, e.g. “variable Internet access”.

The questionnaire results noted one person who saw some successes of using the VLE, stating that they had exchanged results for the solar panel project on the VLE and that they knew this by looking in the VLE regularly. However, this was in direct contrast to the later discussion with the co-ordinators, who all remarked that people were not uniformly posting results and suggesting a stipulation that people need to login in regularly, at least once per week. Indeed one teacher explained that, “I think it has been the management of the solar panel [project] which didn't work and the problem that it was very confusing”. The implication here is that people have different perceptions of what is happening and what success might look like. There are various reasons, as to why this difference of opinion might be present. It could be as a result of the different backgrounds and countries from which these people come. However, it might also be because the teacher who said results were being exchanged and that he was logging on regularly, was also the teacher responsible for leading the solar panel project.

Many of the teachers commented on what they might do next time, to integrate the VLE, for example, “co-ordinate with international colleagues in the VLE before beginning”. This comment also showed how teachers understand the need for collaboration with other colleagues. In regard to the

use of other web based communication technologies the data showed that students preferred to communicate with other students using Facebook. During the Cycle II / Phase II analysis, data again revealed the possible reasons why some teachers are not collaborating or using the VLE. For example,

“... the platform and um it’s new for the students and it’s still new for me. I don’t know already all the possibilities. So we have our own platform and we are more used to it and this is different. We have ‘Smart School’ [a school VLE] so I am very used to that and that makes it more challenging.” (Mahogany)

It might be that the teacher in this excerpt is ‘more used’ to their school VLE, which may be leading to a resistance to change or to using the new VLE. However more data are needed to clarify this assumption.

As well as the data revealing reasons why the teachers are not integrating the VLE into teaching practices, there are some data to suggest why students do not use it. For example,

“They want immediate response, and we have to say sorry but that’s just not possible, for example you just don’t know whether they are online at the moment.” (Ash)

This quote demonstrates two points. Firstly, it shows how this teacher does not appear to understand the benefits of asynchronous collaboration. The VLE is only seen as providing synchronous possibilities. However, according to Woo *et al.*, (2008) asynchronicity can encourage deeper reflection as people think more carefully before responding, thus potentially extending learning (see section 3.3.7).

Secondly, the quote demonstrates how the experience of students is related to push technologies with instant notifications, e.g. messaging and microblogging and this has been explained further by the following teacher, who said

“Our students are not used to err, to use the VLE for working in school. They use it just like all young students or young people all over Europe or all over the world use it, they have to look how the social contexts there, Facebook or something more ... and they learn in a certain way ... so they use it particularly in the lessons to research something, err, very short and just in a superficial way, and that’s all.” (Pine)

They use the Internet for social media, to look things up / search for information, but they have not used it in a more serious manner for work. This teacher has awareness of student practices with technologies.

The Cycle II / Phase II analysis also revealed data on how the VLE had been used. For example, an “... ice breaking discussion area where each student put say something: hello..., I am..., I like to hear and this and this ...”.

Another teacher noted that projects had been placed on the VLE, but in most cases, these folders were empty containing only the name of the project and the initial idea of what the project was about. The lack of structure or teaching strategy for the VLE, might explain comments such as, “Students tended to use the VLE as a kind of shop window to show what they had done in class” as no collaborative activities were built into the project design.

Some teachers expressed the continuing challenges with the VLE, although in so doing, they highlighted gaps in their understanding of how the VLE can be used pedagogically, as the following two quotes demonstrate, “For me, ELvis works as a learning platform not as a communication platform there is too much going on to keep track of”. Here the teacher does not appear to see the connection between online communication and online learning.

Some of the comments demonstrated a need for help, for example, “We need more learning about technology software.” However this teacher did not discuss professional development with technology in relation to learning enhancement. Other teachers talked about how they plan to use the VLE, in the future, for example, getting students to write down ideas about a certain topic so that other students can see them. There were also comments about how teachers use other technologies, for example, “Skype is the best way of

talking to other co-ordinators and managers - particularly if there is more than one in the call.”

In the Discussion Group, some teachers noted that technology in general was being used more, for example, “More use of ICT in class and also as homework.” There was also a difference in opinion about the age groups of students that these projects work well with. For example, one of the German schools said that it is harder with the younger students, as they don’t understand why they should work that way. The Dutch school said the opposite, adding that these projects worked best with the older students.

#### 5.5.4 Summary of section 5.5

Table 5.15 summarizes the data, which has emerged from Cycle II / Phase I and Phase II of the Cycle II research.

	<b>Cycle II / Phase I</b>	<b>Cycle II / Phase II</b>
<b>Curriculum Design</b>	Both during Phase I and Phase II, the data suggested that there was a lack of teacher agreement on curriculum design. The differences of opinion were around accreditation, learning outcomes, what subjects are best suited for projects, whether the project content should match the schools’ curriculums and the type of activities to include in the design. There were more data on curriculum design in Phase II, rather than Phase I, which is suggestive of more discussions between teachers on this aspect of the virtual international school, particularly as the Phase I data were re-analysed in light of the new, post Cycle I (Pilot Study) research questions.	
<b>Teaching Strategies</b>	The findings associated with teaching strategies from Phase I demonstrated how teachers were tentative, highlighting some issues and making general comments about mainly future actions with minimal suggestions on how to shift their pedagogies.	In the analysis of Phase II data, evidence emerged of teachers acknowledging how their teaching strategies had either stayed the same or started to be explored. Some of the comments discussed student weaknesses, whilst others explored general future actions, neither of which articulating specific teaching strategies.

		<p>In some instances the data revealed insights on the teacher-student relationship in relation to the locus of control and in differences between countries. Problems encountered within the distributed partnership of schools that make up ELvis were also mentioned</p> <p>However, the data also revealed that most teachers are on the beginning of a journey, where they have raised issues with implementing new teaching strategies such as those, which are labour intensive.</p>
<b>Technology Integration</b>	<p>During the Phase I analysis, the data demonstrated a variety of reasons why the VLE was not used. Many of the teachers commented on what they might do next time. In regard to the use of other web based communication technologies the data showed that students preferred to communicate with other students using Facebook.</p>	<p>As well as the data revealing reasons why the teachers are not integrating the VLE into teaching practices, there are some data to suggest why students do not use it. The Phase II analysis also revealed data on how the VLE had been used.</p> <p>Some teachers noted the continuing challenges with using the VLE, expressing a need for help. However data from the focus group discussion showed how teacher's use of technology in general has increased since Phase I, although it is still limited.</p>

Table 5.15: A summary of key findings relating to RQ1, derived from the Cycle II research

## 5.6 The Discussion of Findings Related to RQ2: What factors are inhibiting and/or contributing towards any change?

In the preceding section, the data has provided evidence on RQ1, which explored whether curriculum design, teaching strategies and technology integration were changing over time during Cycle II. This section presents the discussion of findings from Cycle II in relation to the second research question, as follows:

In the context of a pan European virtual international school:

**RQ2.** What factors are inhibiting and/or contributing towards any change?

During the analysis of the Cycle II data, twelve different categories emerged, (see section 5.3) although many of the phrases within them could be coded in multiple ways. The re-analysis of the Cycle II data in light of RQ2 led to a re-organisation of the codes and categories as relationships between phrases developed during a mapping process. These are now discussed in relation to RQ2.

### **5.6.1. Beliefs, Attitudes and Values**

Some of the evidence collected during Cycle II could be coded in multiple ways. The following quote is about teaching practices but also says something about attitudes towards action research, “Teaching with or rather using action inquiry takes more time to cover topics”. This teachers’ perception of how long it takes to teach topics using action inquiry, is inhibiting their willingness to use it. However, as suggested by Freison (2009), new technologies require teachers who work in teams to facilitate a disposition of inquiry.

In this quote, “21st-century teaching and learning has not been achieved of course, also because we work in the 20th century environments with small adaptations” the teacher is suggesting that a barrier to changing teaching practices in the virtual international school, are the restrictions imposed on

them by their school environments. This demonstrates the complexity of pedagogic shift. In other words, the willingness of a teacher to change their teaching practices is not enough to enable pedagogic shift to happen. There are other external considerations such as those highlighted in this quote.

### **5.6.2. Collaboration**

During the Cycle II analysis, the data demonstrated mixed views on how well teachers are collaborating. Some said they were collaborating, some said they weren't and some comments were tentative, for example, "More or less we are collaborating more closely I think". As defined in Chapter 1, a central element of pedagogic shift is the ability of teachers to collaborate as they change their teaching practices and integrate web based communication technologies in those practices. In reviewing the Cycle II data it emerged that teachers were only collaborating face-to-face and collaboration was about general and logistical issues associated with the school, rather than issues associated with pedagogic shift. This suggests that before pedagogic shift can occur, other structures and processes need to be in place.

### **5.6.3. Cultural and Contextual Differences**

As virtual international schools are composed of different nationalities, there may be cultural and contextual differences between the teaching group and school systems they are from. Data have emerged from Cycle II to support this assumption, although it is unclear the impact this has had on teachers' ability to engage in pedagogic shift. For example, in this quote, differences between schools systems are acknowledged,

"We have in our school right now a transformation from results you can measure, you can see he is able to do this and do that ... from this kind of learning to competency oriented learning." (Bay)

This same teacher notices how other schools are very didactic in approach. One could assume that more didactic schools might find it harder to make a pedagogic shift than those teachers who are teaching to develop competence



oriented learning in students. However some of the most insightful comments have come from one of the co-ordinators from the most didactic school system, as demonstrated by this quote:

“In my school I can say there is a big difference between what we do in ELvis and what we do in school, because most of the other subjects are done by front teaching and the students just listen and then they learn what they have listened to. So there is such a big difference, that I don't think they can apply (laugh) what they are learning in ELvis to their ordinary lessons.” (Beech)

This teacher clearly perceives of differences between a virtual international school and their own school and reflecting on this has led them to some further conclusions about student learning.

The data analysis also suggests that this particular teacher has been the most active in collaborating online, in taking part in projects and in getting students engaged. This could be for a variety of reasons, for example because this teacher sees it as a real opportunity for the students to experience a different kind of learning or because the idea of teaching practices in a virtual international school are so very different from what they currently practice in their own school setting.

There were also some mixed opinions about accreditation, which demonstrated cultural differences that may impact on pedagogic shift. For example, one teacher suggested in a questionnaire response that, “getting accreditation is difficult. Perhaps we need to start with endorsement before accreditation”. However, there was no common agreement on whether accreditation was needed, with teachers from one country saying during the focus group discussion that students are unlikely to be motivated or even interested in getting either endorsements or certificates of involvement.

#### **5.6.4. Evaluation, Reflection and Inquiry**

According to Cranton, (1996), critical reflection is a central process in

transformational change. However, the data that emerged suggested that there was little reflection taking place and that, which did occur lacked structure or depth. For example,

“It has made me reflect on and move more towards getting students to learn, rather than me to teach them.” (Spruce)

This comment, although reflective, lacked criticality, or concrete actions, which might lead to a pedagogic shift. However, there were three isolated instances where the data showed more criticality. For example, one teacher reflected on the issue of student collaboration and in so doing, distinguished it from communication,

“Yes, but how do they introduce something together, because discussing is easy, you can say I think this, that or the other, I agree with you, I think this and that. But, when you have to produce something together then this is different, it is not easy. But it is something they must learn to do, because in the real world of work it is what happens.” (Beech)

These differences in levels of criticality and ability to engage in reflection, may impact on the rate of change in adopting new teaching practices as a group of teachers. Further data on these differences in individuals, may also contribute towards the emerging research field of groups learning as an entity, as discussed by Cranton, (2006) (see section 3.4.4).

### **5.6.5. Support Systems and CPD**

During Cycle II data analysis, there was little evidence of teachers or co-ordinators acknowledging the need for structured help. Although acknowledging that teachers lacked expertise, the only comment addressing this was made during the Cycle II / Phase I data collection, “Give the teachers space and time to experiment and develop new didactical methods”. In other words, there is an implication that teachers can work it out for themselves. In Cycle II / Phase II, one teacher commented on the successful intervention of a facilitator and another teacher noted the support a teacher was giving the rest

of the teachers working on her project.

During the Cycle II / Phase II data analysis however, most of the teachers felt that teacher professional development was an area that needs addressing in ELvis, with one teacher noting that, “We need greater conversations between teachers and innovators, taking on questions about teaching styles.”

However, there was no discussion on exactly how this would take place. This demonstrates a difference between Phase I and Phase II, regarding teachers need for help in learning about pedagogic shift.

#### **5.6.6. Group Dynamics and Communication**

In the Cycle II / Phase I data analysis, there was no evidence of teacher group dynamics or group development. However from the Cycle II / Phase II analysis, data emerged on group dynamics as reflected in this quote,

“People are too negative, teachers in meetings ... there are lots of tensions ... you should sometimes leave your egos behind and work on a project and at a certain time you have to stop being negative about things and work things out, find solutions, how it works better and leave all the baggage behind and go for the goal.” (Mahogany)

Here, this teacher suggests how different personality types have impacted on designing successful projects in the virtual international school. They view collaborative working as problematic. It is unclear whether this negative view of collaborative working, was shared by others or if it has impacted on pedagogic shift. However, Kasl *et al.*, (1997) suggest that for the group to learn, these tensions or conflicts need to be shared with the group and this requires good communication between the group members.

Throughout the Cycle II analysis, data emerged about group communication. Specifically the data highlighted issues such as a lack of practical organization, lack of interaction and muddled communications. Some teachers stated that communication is difficult because of language barriers, too many discussion threads in the community or teachers not engaging as

they do not logon to the VLE often enough. Only one comment was positive, saying that they had had successful international communication in their particular project. However, it was not clear, whether this was online or face-to-face communication, or communication between teachers or students and teachers.

Effective communication is a central component to not only building relationships, fostering a sense of group / community and making projects successful but in developing professional practices as teachers experiment with new teaching strategies (*NREL*, 2003). If effective communication is not taking place between the teachers, then progress will be slow or non-existent.

The lack of communication between schools and teachers outside of face-to-face meetings was not explored at any length between the teachers or co-ordinations and this in itself inhibits the ability of the group to learn and change.

### **5.6.7. Isolation**

Many of the teachers have experienced isolation within their individual schools. For example, one teacher noted that teachers in their school perceived working in the virtual international school as extra work,

“Last year they told me, ‘Why do you do all this? You don’t get any extra money for that.’ They don’t say clearly or critically but, mmmm, they were implying that what I was doing was also damaging their reputation because they don’t do that.” (Beech)

These teachers were not prepared to engage in the virtual international school and felt uncomfortable with the teacher who did. This could have a negative effect on how this teacher negotiates time to engage in new teaching practices. However this teacher added that, “sometimes I feel I am the only one [laugh] so my colleagues are somewhere else [laugh] in country X, not in my country.” This suggests that this teacher feels a sense of belonging in the virtual international school and this could be viewed in relation to Group

Dynamics and Communication (see section 5.6.6). In spite of the negative data around Group Dynamics and Communication, it appears that for this teacher, a level of trust and connection has been built with other ELvis teachers. For this teacher, the colleagues were those in ELvis, rather than those in her own school.

This inability to get other teachers involved was reported by others, for example,

“For our teachers, there are a lot of problems to get them involved, normally for the students it works, but it’s difficult to find the students, because it’s difficult to find the teachers and you need the teachers and and and ... most of our teachers say, ‘it’s difficult, it takes time’ and they don’t see [pause] erm ... the results, which you can measure ....”  
(Bay)

There is an implication from this teacher that teachers in his school are resistant to change.

### **5.6.8. Leadership**

From the Cycle II analysis, the data suggest that leadership can be viewed on several levels, these being, leadership in the distributed partnership of schools, leadership of ELvis and leadership of projects within ELvis. Other than this distinction, there was little evidence of how leadership is affecting pedagogic shift in the virtual international school. ELvis has been structured in a non-hierarchical way (see section 1.4), where teachers and co-ordinators from each participating school have run projects through consensus and mutual interest. The data analysis from Cycle II / Phase II suggests that this has sometimes led to a lack of leadership or confusion within projects as is highlighted by this comment made by a teacher during the interviews,

“The solar panel project was part of the exchange with Lecce\* and the teacher who should have been leading the project and was doing the exchange, thought she was doing the ‘Lecce project’, but she should have been doing ‘the solar panel project’. The two ran parallel and nobody understood what was going on and I wasn’t aware of that and

Larch is the co-ordinator and he wasn't aware of it and when he did become aware of it I don't think he did too much about because I don't think he really understood what was going on, so that is why it became a bit of a mess at our school." (Ash)

(\*Leece is the town where one of the ELvis schools is located.)

Although this high level of confusion was not shared in all projects, there are other examples in the Cycle II / Phase II data analysis of confusion and lack of leadership in projects. In all these cases, there was no discussion outside of the data collection interviews, exploring what should be put in place as a result of the leadership issue. There were no specific data from Cycle II / Phase I or II, on how leadership in the distributed partnership of schools is affecting pedagogic shift.

#### **5.6.9. Student Learning and Perceptions**

Although students were not used in the data collection, the category of Student Learning and Perceptions emerged as potentially important in relation to pedagogic shift, during the Cycle II data analysis. This can be demonstrated in the following examples,

"Kids seem to be still in the old school working for marks and grades that will get them to the next level without necessarily learning as much as they could." (Pine)

This suggests that students themselves need scaffolding to enable them to shift their expectations on what constitutes learning. However, this may be problematic in schools that do not share the ELvis vision of learning in practice. The impact of student perceptions and motivations for learning, on teachers' ability to change pedagogic practices is unclear and requires further exploration.

"... and now on the VLE they have to work in another way and I think it's very important also for a skill to see, ah, we can go working with the computers in the lessons and we have to write down our own thoughts, we don't have only to read it, and we don't have only to chat, but we have to work in a serious way." (Pine)

In this comment, the teacher was commenting on how students are learning to work with other students online, rather than just chatting with them.

#### **5.6.10. Technology Integration**

Cranton (2006:6) suggests that transformative learning takes place after the identification of a distorting dilemma and during a critical questioning of one's mindsets, underlying values, attitudes and perspectives. A distorting dilemma can be seen as an unexpected event (see section 3.4.3), which leads to a feeling of unease or perplexity. One such distorting dilemma that emerged throughout Cycle II, was teachers' inability to integrate technology into the projects in spite of having a VLE with a comprehensive toolkit, access to superusers and online tutorials provided by the VLE company. From the data analysis, this appeared to be a universal problem that many if not all teachers shared. In one sense, the conversations around this become a focal point for bonding the group together as they united in their dislike of the specific VLE platform selected. In this sense the communication that took place can be related to the category on Group Dynamics and Communication.

The inability of the group to integrate the technology into projects and their discussions that followed could be seen as a distorting dilemma and the beginning of collective perspective questioning. However during the Cycle II / Phase I data analysis, the dialogue between teachers and co-ordinators did not, in the main, move beyond their dislike of the VLE, so the distorting dilemma did not lead anywhere.

#### **5.6.11. Time**

During the Cycle II / Phase I data collection, teachers and co-ordinators were asked what challenges they had faced so far. Nearly everyone mentioned 'lack of time' as an issue. This remained a barrier to teachers integrating ELvis work into the normal day jobs and as a result was a factor inhibiting any

changes they might make in curriculum design, teaching strategies or technology integration. Time was discussed to a lesser extent during the data collection in Cycle II / Phase II, although when it was mentioned, teachers and co-ordinators were more explicit about the impact that lack of time has had on participating in ELvis. For example, “I just didn't have the time to look at other nice little features like wikis or like surveys.” The issue of time is nebulous however and further data are needed to understand how it inhibits pedagogic shift for different teachers within the virtual international school.

### **5.6.12 Outlier Comments**

The following section discusses the outlier comments that have not fallen into any of the categories highlighted so far.

#### Organisational issues

Some of the data analysis revealed organisational issues. For example, there was a variety of comments associated with decision making as projects were running. Some of these comments described challenges or barriers to working with either colleagues in ELvis, or with colleagues in their respective schools.

Some comments were about the organisation, such as,

“There are problems on the way ... communication, not language, because we all more or less know how to speak English, it's practical organisation, who decides, err, err setting deadlines, stuff like that.”  
(Mahogany)

#### Teacher collaboration

The data associated with teacher collaboration tended to be general and made in the future tense, rather than in relation to how teacher collaboration currently aids in aspects of pedagogic shift. A number of teachers suggested in their interviews that it was important to have one person in charge who creates a framework, with clear tasks and deadlines that people stick to and if possible the framework should not change it too often. This implies that teacher collaboration is not necessarily important, as teachers can follow the



framework, however this is at odds with other views expressed by teachers who suggested that it was inevitable that projects change throughout the running of them, as teachers are not really sure what they are doing or how the projects are going to work. Where there is not a proactive person responsible and no clear framework or deadlines, it was noted that there is often confusion.

Project confusion was often extended when teachers did not keep in touch with each other, as one teacher pointed out when asked how a particular project went,

“It was a flop, a real flop, because there was no connection for a longer period and there was no science teacher and in fact science teachers are most distant to English language.” (Bay)

#### Students / face-to-face

One way that the teachers have tried to engage students in the projects is by offering a face-to-face meeting with the other students in another country. Most teachers agreed that this was important for motivation and learning about each other as this interview extract demonstrates,

Pine: I think it’s very important that the students know each other and they have the opportunity to meet each other. They are very motivated to come to Lecce and they are very motivated to go to Westerlo and to have the contact to the other students

Interviewer: Because they want to work with the other students or because they want to see Lecce?

Pine: Ahh, they want to see the place, they want to socialize, it’s very important, but also to work together.”

### **5.7 Summary**

This chapter has set out to present and discuss the findings from the Cycle II data collection and analysis.

It could be argued that the process of data collection has led to a distorting dilemma for the staff in the virtual international school. Through the data

collection questioning and probing, the teachers have become curious about curriculum design, teaching strategies and technology integration. Although they have given general reflections and raised concerns on what has and has not worked, they have not been able to explore concepts, ideas or issues raised in the data collection process in any detail.

The literature associated with distorting dilemmas (Brookfield, 1991; Mezirow 1991, 2000) suggests that they occur when an event leads to a feeling of discomfort or perplexity. The inclination is to assume that these are therefore negative events. However, it might be that events of a more positive nature could also lead one to appraisal or self-reflection, the next step towards transformational change. For example, in an interview during the Cycle II / Phase II data collection, one teacher remarked that when he was online during a class test, he saw other students working online during their self-study hours. He added that this was something new, as normally, when he goes around the school, students don't appear to be doing anything. He sees something, which places the ELvis projects and the VLE in a positive light, potentially enabling him to see alternative ways to teaching. Both these positive experiences, general reflections and concerns contributed to answering RQ1, with teachers in Cycle II showing more critical awareness of issues associated with curriculum design, teaching strategies and technology integration in ELvis.

In relation to RQ2, the data collected and analysed throughout Cycle II has led to the emergence of eleven categories concerned with factors inhibiting or contributing towards change, as follows:

- Beliefs, Attitudes and Values
- Collaboration
- Cultural and Contextual Differences
- Evaluation, Reflection and Inquiry
- Support Systems and CPD
- Group Dynamics and Communication
- Isolation
- Leadership

- Student Learning and Perceptions
- Technology Integration
- Time

In reflecting and sorting the memos associated with these categories, it became apparent that there were overlaps. This led to a further refinement of the categories and the development of an initial thematic model showing factors required for pedagogic shift, which is now discussed in detail in Chapter 6.

## **Chapter 6 - An Emerging Model to Support Pedagogic Shift**

### **6.1 Introduction to Chapter 6**

In the last chapter, some tentative conclusions were drawn from the interpretation of the data. These included the emergence of eleven categories, which explore the barriers and enablers of pedagogic shift. Pedagogic shift is defined as a change in teachers' conception of teaching processes, which may or may not be transformational in nature (see section 1.1.2). In the context of this research, pedagogic shift is associated with teachers challenging their underlying assumptions on which their conception of pedagogical approaches is based, to enable them to embrace practices, which help learners to make the most of learning opportunities afforded by the new wave of technologies. The notion of teacher transformation relates to the processes of pedagogy combined with technologies.

Holton (2007) suggests that a researchers' ability to conceptualize resides in their ability to create categories from data and relate them to theory in general, a process, which Glaser (1978) termed as 'theoretical sensitivity'. Therefore the purpose of this chapter is to explore the eleven categories in more detail and demonstrate both how they have led to the development of an initial thematic model for pedagogic shift, and how this has informed the focus

for further data collection and analysis during Cycle III of this study, as set out in Chapter 7.

## **6.2 An Emerging Model to Support Pedagogic Shift**

The eleven categories concerned with factors inhibiting or contributing towards change, which emerged from the data analysis during Cycle II research were:

- Beliefs, attitudes and values
- Collaboration
- Cultural and contextual differences
- Evaluation, reflection and inquiry
- Facilitation and change agents
- Group dynamics and communication
- Isolation
- Leadership
- Student learning and perceptions
- Teachers ability / inability to integrate technology into projects
- Time

In reflecting and sorting the memos associated with these categories, it became apparent that there were overlaps. For example, conversations around dislike for the VLE become a focal point for bonding the group together. In this sense, the conversations were as much about the technology as they were about building a sense of community. To try and make sense of these overlaps, memos were arranged on a table and moved around until some coherence began to emerge. Through this process of theoretical memoing and integrative diagrams, (see section 5.3.4), 'statements of relationship' (Charmaz, 2014) were identified, as links, similarities and differences between the categories developed. This process reduced the eleven categories to five,

which were then arranged into a thematic model. Figure 6.1 presents this initial thematic model of the key elements required to support pedagogic shift in a virtual international school.

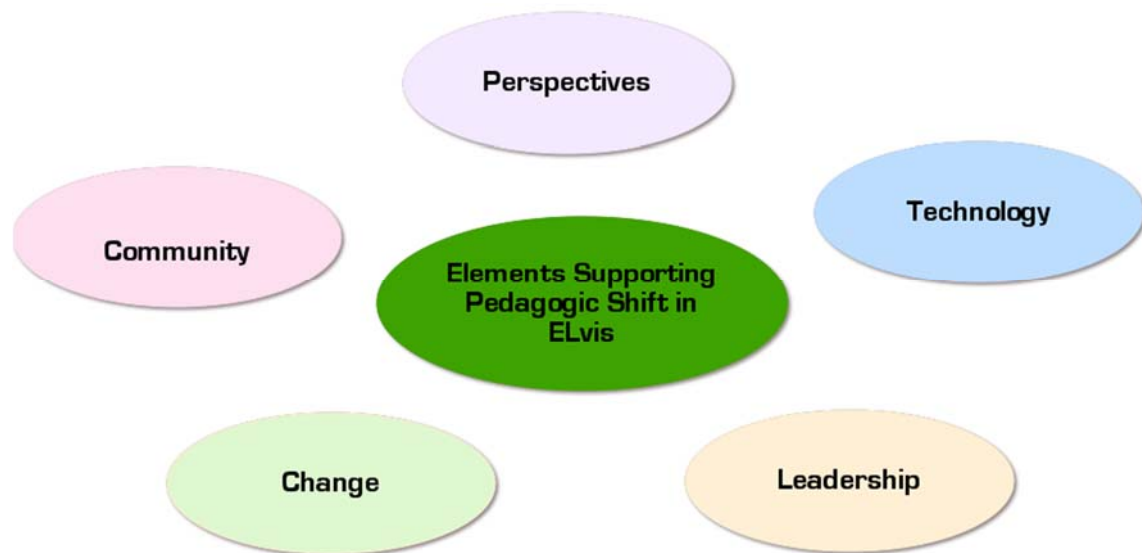


Figure 6.1: A thematic model, emerging from the Cycle II data, presenting key elements required to support pedagogic shift in a virtual international school

### **6.2.1 A Discussion of the Key of Elements Supporting Pedagogic Shift in ELvis**

Five different categories emerged out of the reflexive and abductive process of theory building. Although they each contain distinctive features, they also interconnect. The five categories are now discussed in alphabetical order.

#### Change

The category of Change can be broadly sub-divided into two areas, both of which need further investigation to see how it impacts on pedagogic shift. Firstly change is about the people. For example, who are the change agents and how are they identified as such? Are there facilitators and if so what is their relationship to ELvis? What is the nature of facilitation? Secondly, it is also about the mechanics of the change process. In other words, to what extent have evaluation, reflection and inquiry taken place and has there been

any professional development or other processes to enable change. If there have been, then how have these processes contributed (or not) to pedagogic shift?

### Community

Some similarities emerged between the different categories, identified in data analysis during Cycle II. These included Group Dynamics and Communication, Isolation and Collaboration. These were placed in a new overarching category called 'Community'. Through the reflexive and abductive process, other elements also emerged from the data which were relevant to this category, such as the difference between a face-to-face or online community, how a sense of community is built in virtual international schools, how the community solves problems, negotiates meanings and defines purpose. Communication and collaboration were mentioned at the same time in some instances, suggesting that teachers did not see a distinction between the two terms. Some teachers think that collaboration is taking place, whereas others think more is needed, suggesting that for communication to become collaboration, more depth of dialogue is required. However, it is not yet clear what these ELvis teachers meant by 'depth'.

### Leadership

Leadership can be viewed in terms of structure and characteristics, on three different levels, including individual leadership of projects in ELvis, leadership of ELvis as a whole and the leadership from the schools that make up ELvis. Although leadership has been both implicitly and explicitly discussed throughout the discussion of findings, the relation between leadership and pedagogic shift in the context of virtual international schools needs further exploration.

### Perspectives

Different perspectives on similar topics were articulated from those whom data was derived in Cycle II. These different perspectives also require further exploration in ELvis to see how they inhibit or contribute to pedagogic shift.

For example, Belbin (2004) suggests that the starting positions of participants in a newly formed group need articulating at the outset of collaboration. According to Jones (2008), in a cross cultural context, it is also necessary to explore the different perspectives students might have on how they should be taught as this can inform teachers on issues related to curriculum design (see section 5.6.9). Aligned to this are perspectives associated with school cultures and identities, all of which impact on how teachers perceive of curriculum design, teaching strategies and technology integration. School cultures and identities may also impact on the opportunities for ELvis staff to engage in a change process. National contexts, may change the way teachers view pedagogical shift. For example, during the data analysis it became clear that in some schools, such as the Netherlands, the notion that teachers should change schools as they seek promotion or new jobs within a school system is discouraged, as they have a national policy of 'last in, first out'. Whereas in other national systems, for example in the UK, changing schools is perceived of as a positive step in professional development as teachers learn from different school systems and colleagues. These different perspectives may lead to different perceptions of the process of change in curriculum design, teaching strategies and technology integration. On a personal level, people have come to work together in ELvis with sometimes different or sometimes similar attitudes, values, beliefs and personal motivations. These along with personality types may play their part in how teachers perceive pedagogic shift.

As an example, teachers view success in sometimes opposing ways. For example, Elder thinks it is good that she has complete control and direction over what is happening, where as Aspen thinks that she should stand apart and allow the students to lead.

The conception of time was mentioned both implicitly and explicitly throughout the Cycle II data collection and has been grouped in the Perspectives category for further exploration.

### Technology



Within the technology category, the data revealed issues around barriers to using both the VLE and other technologies. There were also potential barriers to pedagogic shift, due to both limited teacher and student technology competencies. Moreover, the data suggested that teacher perspectives on how technology can be used and their understanding of blending learning, may be limiting pedagogic shift. All of these elements require exploration during the next cycle of data collection.

### **6.3 Relating the Thematic Model of Pedagogic Shift in Virtual International Schools with the Literature**

#### **6.3.1 The Blended Community of Inquiry (BCoI) Model**

A key difference between the BCoI model proposed by Vaughan *et al.*, (2006) and the thematic model proposed in Figure 6.1 is the locality of the staff (see section 3.6.1). In the context of this research the virtual international school staff come from a variety of schools across the EU. In Vaughan's study the staff all come from one institution. This difference has potential implications on how change takes place. For example, in the model proposed by Vaughan *et al.*, (2006), strong leadership drove the initiative forward. This was made possible as leadership came from and operated within one organisation. In the case of ELvis, there are seven different institutions and leadership can be viewed on various levels, for example, leadership of each school or leadership of ELvis. Initial data collection and analysis has suggested that there is a lack of leadership coherence and support. Further data collection and analysis is required to determine how this multifaceted leadership model enables or inhibits pedagogic shift in such a virtual international school.

A second issue is associated with understanding different perspectives. Within the Vaughan *et al.*, (2006) model, there is no mention of how different perspectives impact on changes in curriculum design, teaching strategies and technology integration. However, early indications in the data analysis so far, suggest that within ELvis, recognising different perspectives might be significant in relation to pedagogic shift. Indeed, in the Vaughan *et al.*, (2006)

model, the focus is on selecting appropriate prototype courses that might easily lend themselves to course redesign, rather than on sharing and understanding different perspectives.

### **6.3.2 Transformational Change**

Cranton (2006) puts forward four key phases, which enable the transformative learning process, these being empowerment, disorienting events, questioning assumptions and perspectives and finally discourse, dialogue and support. The teachers and co-ordinators could use their annual evaluation meetings as a springboard for engaging in such transformative learning processes throughout the year. However, the data suggest that in ELvis these meetings are conducted in isolation from all other activities. Moreover, there do not appear to be any structures or access to 'knowledgeable others' (Vygotsky, 1930/1978) who might provide ongoing support and 'scaffolding' (Bruner, 1967) within and outside of these meetings, in a targeted manner. In other words, the data suggest that 'reflection-on-action' (Schön, 1983) is only happening at the annual evaluation meetings or through the researcher's data collection.

### **6.4 Further Gaps and Cycle III Data Collection**

The data analysis during Cycle II demonstrated the group of schools were learning about each other and experimenting with some projects, with limited vision on where they needed to go. In Tuckman's (1965) model of team development, there is an emphasis on the leaders in providing guidance and direction for this initial experimentation. However, the leadership structures are still unclear and data needs to be collected to explore how leadership is enabling or inhibiting development of the virtual international school so that pedagogic shift might take place.

The data also suggest that teachers currently emphasize issues with the web based communication technologies, specifically the VLE, as the key barrier to

pedagogic shift, rather than viewing the use of web based communication technologies in conjunction with an exploration of new collaborative approaches to learning. For example, the data analysis found very little evidence of teachers specifically discussing pedagogy or student learning. Rather teachers focused on the curriculum design in terms of technology or the content of projects. Within curriculum design, for example, there is still little consensus on what works and what doesn't with regards to fitting projects into the curricula of various schools, which creates challenges in creating an overall curriculum blueprint. Curriculum fit appears to be a focal point for the teachers, with discussion focusing on project content rather than project process. Cycle III (In Depth Exploration of Key Themes) will seek data, which further explores these issues and saturates the categories in the emerging thematic model.

## **6.5 Summary of Chapter 6**

This chapter discussed how as a result of the Cycle II (Identification of Key Themes) data collection and analysis, a thematic model evolved. Specifically, the analysis that led to the thematic model (see section 6.1) highlighted key themes, which can be seen to inhibit or contribute to pedagogic shift, these being: Change, Community, Leadership, Perspectives and Technology. Having identified these key themes, a further round of data collection and analysis - Cycle III (In Depth Exploration of Key Themes) - was required, to saturate them, look for outliers and silences and further refine the thematic model. The Cycle III (In Depth Exploration of Key Themes) data analysis and collection is presented and discussed in Chapter 7.

## **CHAPTER 7 - Cycle III (In Depth Exploration of Key Themes): Presentation and Discussion of Findings**

### **7.1 Introduction**

This chapter presents the data that emerged out of Cycle III (In Depth Exploration of Key Themes) of research, followed by a discussion of the findings and a refinement of the emerging thematic model of pedagogic shift. Data from Cycle I (Pilot Study) were presented and discussed in Chapter 2 and data from Cycle II (Identification of Key Themes) were presented and discussed in Chapter 5. The first sections of this chapter present the data collection and discuss the findings in relation to RQ1 and RQ2. The main purpose of Cycle III (see Figure 7.1) has been to use the data gathered in answer to RQ1 and RQ2 to develop and refine the thematic model of pedagogic shift. This is therefore discussed in detail in section 7.7. The final part of this chapter discusses the feedback on approaches to data collection and analysis from the Independent Judge, (see section 4.4.2) and then concludes with a summary.

**Cycle III**  
(In Depth Exploration of Key Themes)

**Purpose:**

1. Further explore the process of pedagogic shift in the context of a virtual international school
2. To develop and refine the thematic model of pedagogic shift.

Cycle	Phase	Date	Source	Method
C.III	P.I	Summer 2012	Co-ordinators	Questionnaires and Focus Groups
	P.II	Autumn 2012	History Teachers	Questionnaires and Focus Group
	P.III		Head Teachers, Teachers and Co-ordinators	Questionnaires and Focus Groups
	P.IV	Summer 2013	Co-ordinators	One-to-one Interviews

**Outcome:**

A refined thematic model of pedagogic shift for use in virtual international schools, with implications for other contexts.

Figure 7.1: Summary of Grounded Theory Research Cycle III  
(In Depth Exploration of Key Themes)

## 7.2 Data Collection

As a result of the Cycle II (Identification of Key Themes) findings, further data were sought over Cycle III (In Depth Exploration of Key Themes), to answer the research questions. The second purpose was to saturate the emerging categories, refine and further develop the emerging thematic model of pedagogic shift and to review any outlying data that might exist. Cycle III data analysis used a theoretical sampling approach (see section 4.3.4) and contained four different data collection phases, as part of the natural environment of ELvis, with the exception of data collected in Cycle III / Phase IV, which consisted of interviews conducted with the sole aim of informing this research.

The Cycle III / Phase I data were collected in the summer of 2012 at the end of year evaluation meeting. This coincided with the end of the first year of the second funding term (ELvis 2.0). The aim of collecting the data at this point was to give time for any new pedagogic practices to have been implemented

since the start of the new funding term. As part of the evaluative meeting data were collected through a questionnaire (see Appendix 7). The questionnaires were emailed out to all the co-ordinators one week prior to the meeting. All seven respondents had filled in their questionnaires in advance of the face-to-face meeting. During the meeting the questionnaires were used as the basis for a whole focus group discussion. Notes were taken during the discussion. Both the questionnaires and these notes were used in the data analysis.

The Cycle III / Phase II data were collected in the autumn of 2012, at a face-to-face History Department meeting as a specific History Project neared completion. This project was selected for data collection and analysis, as it had involved all the project partners. Data were collected at this meeting using a questionnaire, which led into a focus group discussion, which was recorded and later transcribed. During the meeting, the questionnaire was given to the seven teachers from the participating schools, all of whom responded. The questionnaire asked four broad questions, all of which were qualitative (see Appendix 8). Respondents spent ten minutes answering the questionnaire during the meeting and this then led into a focus group discussion, which took place over forty-five minutes. They were also each presented with a blank grid (see Appendix 8) and a verbal explanation of each of the end points on the two continuums. Their responses were then amalgamated onto one grid, which was presented back to them and used as a discussion point.

Cycle III / Phase III data were also collected during the autumn of 2012 at a face-to-face meeting of teachers, co-ordinators and head teachers. During the meeting, a questionnaire was given to all those who were present (five teachers, six co-ordinators and six head teachers) from the participating schools, all of whom responded. One head teacher was unable to attend the meeting and one co-ordinator from a different school was also unable to attend. The questionnaire asked three broad questions, all of which were qualitative (see Appendix 9). Respondents were given ten minutes to answer the questionnaire during the meeting and this then led into a whole focus group discussion, which took place over forty-five minutes.

The Cycle III / Phase IV data were collected in June 2013. All seven co-ordinators and a critical friend to the project were invited to take part in a Skype interview. They were emailed a diagram of the conceptual model and an outline of some questions associated with this (see Appendix 10). Only five of the co-ordinators and the critical friend responded to the email. Of the two that did not respond, one was in hospital and the other had just suffered a bereavement. Each interview lasted between fifty minutes and one hour ten minutes. All interviews were recorded and later transcribed in preparation for data analysis.

Data from all phases were transcribed into rich text format files. Data from Cycle III / Phases I, II and III were then analysed using hyperResearch software (see section 4.3.3). Cycle III / Phase IV data were coded by hand (discussed in section 7.4) and is presented in section 7.3.4.

### **7.3 Presentation of Cycle III (In Depth Exploration of Key Themes) Data**

Data from Cycle III / Phases I, II and III are presented in Table 7.1. This table summarizes the frequency of coded phrases that occurred during the first three phases of Cycle III. The table also includes new codes that have emerged during these phases such as 'external drivers' and 'personality types' that were not present during the Cycle II data analysis.

<b>Cycle III / Phase I</b>		<b>Cycle III / Phase II</b>		<b>Cycle III / Phase III</b>	
<b>Codes</b>	<b>Freq.</b>	<b>Codes</b>	<b>Freq.</b>	<b>Codes</b>	<b>Freq.</b>
Project Design	17	Project Design	15	Teacher Engagement	8
VLE Use	17	Student Engagement	14	VLE Use	6
Leadership	12	VLE Use	11	Development	5
Assessment	8	Leadership	7	Project Design	5
Support	8	Problem Solving	6	Communication	4
Teacher Engagement	7	Ambassadors	3	Conceptions of Pedagogy	4
Conceptions of Pedagogy	7	Support	3	Different Perspectives	4
Time	6	Collaboration	2	Leadership	4
Collaboration	5	Communication	2	Building Community	3
Building Community	5	Conceptions of Pedagogy	2	Personality Types	3
External Drivers	5	Cultural Diversity	2	Support	3
Cultural Diversity	5	Reflection or Evaluation	2	Isolation	2
Concern	4	Building Community	1	Reflection or Evaluation	2
Ambassadors	4	Development	1	Collaboration	1
School Identities	2	Time	1	External Drivers	1
Communication	2			Face-to-face	1
Student Engagement	2			Problem Solving	1
Inquiry	2			Silence	1
Personality Types	1				
Professional Development	1				
Reflection or Evaluation	1				
<b>Total Comments</b>	<b>121</b>		<b>72</b>		<b>58</b>

Table 7.1: The frequency of coded phrases occurring during Cycle III / Phase I, Phase II and Phase III



### 7.3.1 Cycle III / Phase I

Out of the 121 comments coded from the data collected in Cycle III / Phase I, over a third were associated with either: 'project design', 'VLE use' or 'leadership'.

Example quote regarding Project Design: "It seems that maybe small scale and often bilateral projects are the most successful"

MEMO related to this code: There is general agreement with this in other comments, demonstrating that with time and experience they have come to some similar conclusions

Comments made about 'project design' were broadly divided into two areas. The first were more concrete, suggesting that projects should be small, simple, well planned and fitting into timescales of the various schools. The second set of comments, were less tangible, about aspirations and pedagogical approaches.

Example quote regarding VLE use: "Teachers: the VLE was used better than last time; the fact that we have known each other for some years now also greatly helps."

MEMO related to this code: To what extent is their perception that the VLE is used more, related to the deepening of personal relationships between the teaching group, which has paradoxically been fostered in face-to-face situations? Could the virtual international school run without any face-to-face interactions?

The comments in this section could be divided into those who talked about improved usage and those who highlighted barriers to using the VLE, most of which were associated with the complicated interface, which prevents teachers from setting up courses with ease or is de-motivating for students. Two of the comments discussed teacher preferences for email and / or Facebook as they provided immediacy and one mentioned that the barrier for teachers was poor language skills in English.

Example quote regarding Leadership: “Progress has been very small. Managers especially have let us down. There has not been a drive from above (with the exception of Pine, Oak and Yew who have at least tried to get something going).”

MEMO related to this code: Here, this respondent directly links the lack of success in ELvis with the lack of support from school leaders.

There were wide ranging comments made about leadership, often suggesting a relationship between leadership and its’ influence on ELvis. Most of the comments could be split into things about the head teachers of the various schools or the ELvis co-ordiantors or about the logistics of leadership in the context of a virtual international school.

### **7.3.2 Cycle III / Phase II**

Over half of the comments coded in the data collection in Cycle III / Phase II were associated with either ‘project design’, ‘student engagement’ or ‘VLE use’.

Example quote regarding Project Design: “And that is even because we have different opinions on how to do it as it was not planned detail enough”

MEMO related to this code: Although they used a newly introduced project template, it was either not clear or detailed enough, or they did not concept check with each other that they shared the same understanding of the tasks and expected outcomes. So this may also relate to perceptions.

Within the code of ‘project design’, comments could mainly be organised under planning or scope for learning, with two comments associated with concept checking and sharing meaning.

Example quote regarding Student Engagement: “They learned a lot about social history, about witnesses, about internationalization. It was really a great experience for them, I’m sure.”

MEMO related to this code: The students appear to have learned, but the words “I’m sure” suggest that this is the teachers’ opinion, rather than there is any factual evidence to support it. This was discussed elsewhere, where one teacher said to the others, “How do they know learning has taken place as there is no assessment process built into the project design?”

Most of the data coded ‘student engagement’, were concerned with student learning or the high levels of motivation that students had in this project. Of the data associated with ‘student learning’, teachers either talked about what they had asked students to explore, for example issues around social history, democracy or World War II, or they referred to how they had used technologies, or become more autonomous or independent learners. One teacher discussed how he used one set of students (the ELvis ambassadors) as guides or mentors for the other students.

Example quote regarding VLE use: “Most of the VLE was used in the first phase of the project”

MEMO related to this code: It seems that the VLE is used in this and most other projects, as a way of introducing the students to each other, as well as introducing the project. After this, it is rarely used. What is preventing the use of the VLE?

The data coded ‘VLE use’ demonstrated that the VLE were either not used or only used a little and mainly during the preparatory stages of the project. As the project continued, students changed to use Facebook and Dropbox rather than the VLE.

The grid in Figure 7.2 was created from an amalgamation of the responses from the teachers during the Cycle III / Phase II meeting.

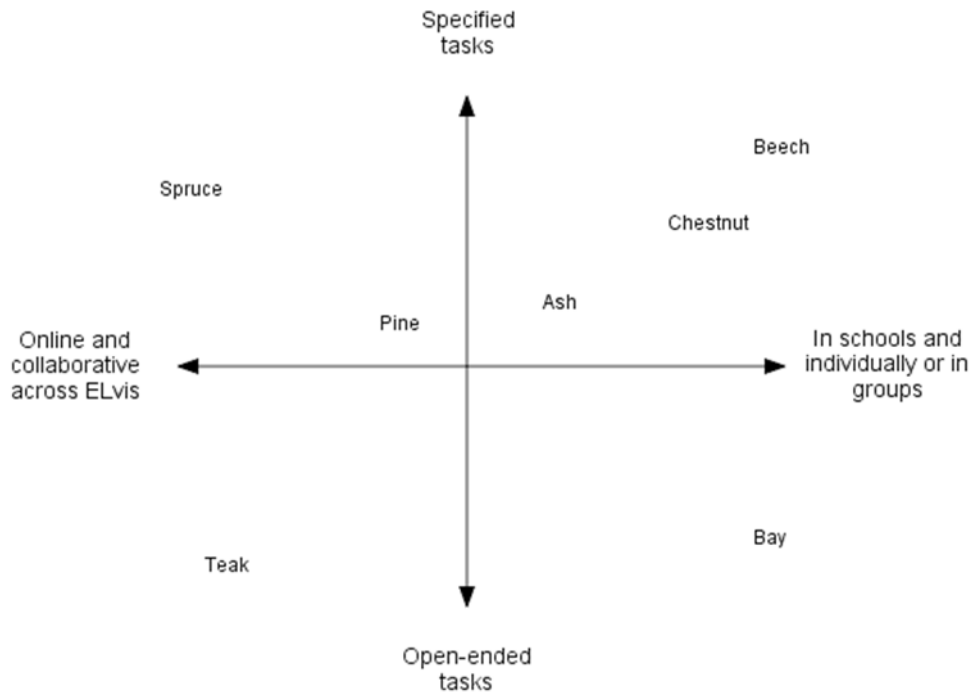


Figure 7.2: A diagrammatic representation of how teachers pedagogically defined the History Project

The grid was adapted from Coomey and Stephenson (2001), who created a paradigm grid for online learning (section 3.5.2). The vertical axis remains the same, however the horizontal axis has been modified to present two ends of a spectrum regarding collaboration. At one end, online collaboration takes place within the History Project and across all the schools participating. At the other end, schools within ELvis are working in isolation, with face-to-face groups or students working individually. Teachers were asked to plot where they thought the History Project was, on the grid. The analysis of this grid is discussed in section 7.5.1 of this chapter.

### 7.3.3 Cycle III / Phase III

Just under half of the data collected during Cycle III / Phase III, were associated with either 'teacher engagement', 'VLE use', 'project design' or general 'development' in ELvis.

Example quote regarding Teacher Engagement: “Yes, for us it is different, because we are quite a small school, what we found is that teachers are infected by others.”

MEMO related to this code: This is a different view to the other teachers and may be to do with the size of the school, in that there are already strong relationships between staff, or it could be something to do with the school identity or the culture. This also demonstrates how teachers see differences between the participating schools.

All of the data that fell into the code of ‘teacher engagement’, were associated with the barriers and enablers to inclusion of colleagues in ELvis.

Example quote regarding VLE use: “What the problem is, people get frustrated with the platform ITS Learning, and we have been saying this for several years now. People get frustrated because it doesn’t work and then they are not motivated anymore and they step out of it.”

MEMO related to this code: There is a link with the VLE and staff motivation and engagement. Actually the VLE does work, but teachers cannot use it how they want to. So when they say ‘it does not work’ they really mean, ‘it is not fit for their purpose’. However, it is unclear whether they know individually or have a shared understanding of what the purpose of the VLE is. Also, in spite of this particular person noting how they have “been saying this for several years now”, that the VLE is no good, the leaders of the schools signed up for a new contract with the VLE company. It is unclear from the data why this happened in light of this teacher’s opinion.

All of the comments were lengthy and mostly described issues with the chosen VLE that prevented engagement. Three comments described how other technologies were being used.

Example quote regarding Project Design: “Sometimes there is a very intensive contact between teachers. I know it from the Pop Songs Project, from the Dream School Project. The teachers involved are in a very close

contact and they decide how to go on working and that is not always the plan of how it started.”

MEMO related to this code: There are several points being made here. Firstly, it shows that projects are now being run, which is progress from Cycle III / Phase I, but mainly it is about the importance of ongoing communication during projects, between the teachers as the project progresses. It is also about the need for flexibility as the plan and the practice diverge.

Example quote regarding Development: “No clear guides for people involved in the projects.”

MEMO related to this code: This could mean that a new person has not been inducted into ELvis, as there is a guide for teachers to use when planning and getting involved in projects. However it could also mean that the project this person was involved in, did not use the project template / guide.

Most of the comments described a journey of development from when ELvis started, to what ELvis is now, to where ELvis needs to go.

Tables 7.2 - 7.4 summarize the qualitative responses from the teachers, co-ordinators and head teachers during the Cycle III / Phase III data collection.

**Question A: Why do you want to be part of ELvis?**

<b>Responses:</b>	<b>Head Teachers</b>	<b>Co-ordinators</b>	<b>Teachers</b>
Change of everyday routine		1	
Improve my school	2		
Improve my position	2		
Links with other schools			1
Meet colleagues and friends	2	4	
Opens minds and horizons	2	2	1
Personal staff development	3	3	4
Student overseas collaboration	2		

Table 7.2: A summary of responses during the November 2012 face-to-face meeting relating to Question A

**Question B: Why does your school want to be part of ELvis?**

<b>Responses:</b>	<b>Head Teachers</b>	<b>Co-ordinators</b>	<b>Teachers</b>
Building a network		1	2
Build global citizens	4	2	
Developing cross curricular projects	1		
Improve school image	1	1	
Money	1		
Open minds and horizons		1	4
Part of school development plan	2	1	2
Staff professional development	5	2	2
Student learning	5	2	2
Students practice foreign languages	2		
Work with ICT	2		1

Table 7.3: A summary of responses during the November 2012 face-to-face meeting relating to Question B

**Question C: How is ELvis currently different to ordinary school?**

<b>Responses:</b>	<b>Head Teachers</b>	<b>Co-ordinators</b>	<b>Teachers</b>
Active learners	2	1	
Co-operative working and learning	3	2	3
Cross curricular working	1	3	2
EU, international and global dimension	6	9	6
Independent learning	1		
Interpersonal skills			1
Networking			2
Personal development opportunities	2	1	
Practical language skills	1	1	
Small groups	1		
Working on a VLE		1	
It's a virtual school and must not be overvalued	1		
Organisational	1		

Table 7.4: A summary of responses during the November 2012 face-to-face meeting relating to Question C

### 7.3.4 Cycle III / Phase IV

During Cycle III / Phase IV a series of interviews was conducted with the coordinators of the participating schools (see section 7.2.4). The interview questions were semi-structured and in line with categories related to the emerging thematic model (see section 6.2) to enable saturation and theory building (see section 4.3.4). The themes under which discussions were based were: The ELvis Journey; Change; Community; Leadership; Perspectives; Technology. All questions were answered fully by the interviewees.

All six who responded said that ELvis has changed. Typical comments included “I think we have had a very long journey” and “ELvis has come a long way”. Within Perspectives, all agreed that not enough time had been given to explore the differences and similarities in a variety of perspectives ranging from pedagogy to culture. When interviewees came to talk about Leadership, they were united in their view that ELvis would not be what it is today without the leadership of one particular individual, Beech. There was a range of comments associated with other aspects of leadership, for example, leadership of projects within ELvis and leadership from the participating schools.

Within the area of Community it was generally agreed that not enough communication took place and that collaboration was spasmodic outside of and driven by the face-to-face meetings, for example, “I only get to do stuff when I know a meeting is coming up”. Mostly, the interviewees felt that there was some sense of community but that ELvis itself could not run without face-to-face meetings. The responses regarding Change, can be split into three sections: the agents of change, for example, “most ideas in our discussions I have received from Maple”, the constituents of facilitation, for example, “when something happens, you can help to draw out the key learning” and the barriers and enablers to facilitation, for example “teachers don’t want to change anything”.



The last area covered in the interview was Technology. Most of the comments were associated with the barriers to using the VLE, for example, “the notification system is not that sophisticated” which led to comments about alternative technologies, for example, “in part of my lessons I use Dropbox and Facebook”. There were also some comments on the process of technology adoption, for example, “they learn about one [VLE] and they want it to stay like that. I think most of the population is unhappy with things that constantly change”.

#### **7.4 Reflection on the Data Collection and Analysis Process**

Improvements were made in interview technique between Cycle II and Cycle III. During Cycle II, the researcher had less confidence conducting interviews, partly due to not knowing exactly how to frame follow up questions during the interview. This changed in the Cycle III interviews, where there was a more confident approach, underpinned by better relationships with the teachers and experience of how to phrase follow up questions that seek depth.

The data analysis from Cycle III, demonstrated how the participants could talk in a more detailed manner about the issues surrounding pedagogic shift in the virtual international school. Whilst it could be argued that this has demonstrated participants have more understanding about what they are trying to do in ELvis, it has also made it harder to separate out meanings in the analysis. For example some discussions around curriculum design were interwoven with the rationale for using particular teaching strategies, such as the comment made about student autonomy and independent learning in the History Project (see section 7.5.2). This issue was resolved by rereading the data on several occasions, to see if the same conclusions could be drawn. Some data were multiple coded and referred to several times in different sections of the analysis as different points were discussed. Data from Cycle III / Phase IV were particularly problematic to analyse using the hyperResearch software. Having had several attempts, the coding was eventually done by hand, printing out the transcripts, cutting them up and arranging and re-

arranging them into groups until sense could be made of them (see Appendix 11).

## **7.5 The Discussion of Findings Related to RQ1: Are curriculum design, teaching strategies and technology integration changing over time?**

The data collected during Cycle III (In Depth Exploration of Key Themes) demonstrated participants' growing ability to engage in greater depth of discussion about pedagogy. In comparison the Cycle II (Identification of Key Themes) discussions, interviews, and focus groups yielded data, which showed participants unable to explore ideas beyond initial acknowledgement of issues. A full analysis of the Cycle III (In Depth Exploration of Key Themes) data are presented in this section and uncovers elements of, and enablers to change, such as a growing familiarity amongst participants, clearer ideas of what they want to do based on what has already taken place or due to their use of a facilitator. These are now discussed in detail, beginning with the first research question which asks, 'Are curriculum design, teaching strategies and technology integration changing over time?' The discussion then continues by reflecting on the data in light of the second research question, which asks, 'What factors are inhibiting and/or contributing towards any change?'

### **7.5.1 Curriculum Design**

ELvis does not have a set curriculum rather it has projects against which curricula followed in the various schools are mapped. The data analysed across the whole of Cycle III (In Depth Exploration of Key Themes) demonstrated that it is hard to create a 'curriculum fit' even in spite of international subject department meetings. Most of the comments analysed from the Cycle III / Phase I data, detailed what works in the design of ELvis projects for example they need to be simple and flexible. There was general agreement about this, demonstrating an alignment of thinking amongst the teachers' trialling different project designs. One participant commented that if a project is going to work, teachers should have met first. Although not

identified by others during Cycle III / Phase I, this idea was echoed extensively during the Skype interviews later in Cycle III / Phase IV.

### Problems of Curriculum Fit

An example of how an international department meeting resulted in a project was the History Project, which was used for data collection during Cycle III / Phase II. The project used a simple idea with built-in flexibility, as agreed by participants as necessary characteristics of a successful project. However, in spite of all teachers being history teachers, the data analysis showed how none of them was able to fit the project within their actual curriculum / lesson time. Even so, there was general agreement that the project had been a success in terms of student learning. However one teacher pointed out that student learning had not been articulated or made explicit, rather it was a view of the teachers that learning “must have” taken place as students had successfully created the videos of WWII oral histories. This lack of evidence of student learning prevents any conclusions being drawn regarding the type of learning that might occur in virtual schools. In other words, during the literature review, it was suggested that virtual international schools might provide new ways of learning and contribute to the notion of a ‘learning society’ (Hutchins, 1968). Although the data are suggestive of student learning, there is no concrete evidence to confirm this without doubt. This silence is discussed further in section 7.6.6 – Other Factors.

### Planning

Analysis of the Cycle III / Phase II data showed that planning on its own is not enough for successful projects to run. Concepts in the plan needed to be checked by all the teachers so that everyone understands the same meaning about the ideas in the plan, particularly as English is a second language for most. This difference in perception on the design of the History Project can clearly be demonstrated in the grid (see Figure 7.2, section 7.3.2), which the teachers filled out. The History Project was categorized in seven different places on the same grid. Three people saw the same project as being online and collaborative across all ELvis; the remaining four all thought that the

project had been completed in schools by individuals or groups. Two people felt the tasks had been open ended whereas the other five all thought the project contained specified tasks. Clearly the teachers interpreted differently the way the project was run, which was explained by one teacher thus: “there are several people from several countries involved in starting these projects and they have several methods to do it. And it depends on the individuals”. This implies that teachers ran the same project differently in the various schools, which is potentially why collaborative working is problematic. It is unclear from the data, why teachers ran the project differently. It could be to do with the different pedagogical approaches used in the various schools and countries or it could be to do with the lack of leadership in this particular project or yet another reason.

### Pedagogical Discourse

At a fundamental level, the History Project grid demonstrates how some teachers are still tied to a pedagogical model associated with ‘knowing what’, rather than in engaging in pedagogies that support ‘knowing how’, (Säljö, 1979). Teachers engaging in different pedagogical approaches may have been one of the factors that has prevented pedagogic shift from taking place within ELvis. Moreover, the lack of discourse between teachers on these pedagogical approaches may have prevented a ‘group mind’ (Kasl, 2000) from developing.

### Vision of Success

In Cycle III / Phase IV, the interviewees were asked what a successful project looked like. There was a wide variety of responses, some of which demonstrated differences of opinion. For example, one interviewee said “Short projects with clear aims and objectives and not too many people involved. This would be the basis for success I would think”. Whereas another suggested that, “success would be a large number of students”. This respondent implied that higher numbers of students would ensure some degree of success; however it was not clear why he felt this, although the focus seemed to be on how projects are perceived, rather than on what students may have learned or experienced through the process. So, although

there had previously been some agreement about projects being flexible and simple, there was still a difference of opinion on the number of people needed for a project to work. During the Cycle III / Phase IV analysis one of the respondents talked about projects from the students' perspective, suggesting that success would be when "the students are enthusiastic and motivated. They have a feeling they are involved, the students are creative, they have lots of ideas and are able to discuss the differences they have". This particular respondent went on to give an example of a project, which was run completely face-to-face over a few days during a student meeting.

#### Virtual / face-to-face Meetings

In other responses from this same respondent, it was evident that he saw the face-to-face meetings as a central component of project design and without it, ELvis would not happen. Some respondents suggested why the face-to-face element is important, for example "I think that is part of the citizenship thing. And it's an important thing I remember the impact it had on me as a teenager". However, this is problematic if trying to engage more than a handful of students from each school in the projects, for a variety of reasons, not least that large-scale travel is prohibitively expensive.

Nevertheless, mobility has been an inbuilt aspect of ELvis. The funding was granted by the EU, on the understanding that there would be some exchange of students and some school visits. How this works in practice however, is controversial amongst the teachers as demonstrated by this Cycle III / Phase IV interviewee who suggested that some schools have "a different agenda about just getting kids out to another country".

This person went on to add,

"What we need is a different structure of individual schools that make up ELvis, which are more flexible with different approaches. I think it would be great if they work together as classes and then sometimes came together to meet face-to-face classes and work on projects together, but the logistics of that is just too difficult." (Maple)

This quote points to an idealized conception of a virtual international school but also the complexity of running projects and marrying these with the needs of individual school agendas.

### Collaborative and Comparative Projects

Respondents also talked about the importance of students collaborating across schools, although the analysis shows that there is some confusion amongst teachers on the differences between comparison, discussion and collaboration. For example, one respondent talked about comparing finished products (be they assignments, videos, presentations or items made in the production workshop) rather than true collaboration throughout the lifespan of a project.

It appeared from the Cycle III data that some teachers still struggle with making projects collaborative or do not yet understand what it means to have a collaborative project. The former point is articulated by one of the respondents who says 'of projects that "easier ones are comparative, but I think collaborative ones could be done, although it is more difficult".

### Collaboration and Technology

Another teacher added that "They [the students] are not used to using VLE and other web based tools for work, they use them synchronously for instant communication". Here the teacher highlights students' use of technology, which is 'immediate' and associated with communication applications such as What's App, Twitter or Facebook. This has implications on the pedagogical approach used, raising questions such as, should the purpose of technology use in teaching and learning be for 'immediacy'? Can deep learning happen without time for reflection and internalization? Should teachers nurture different expectations in students? These questions highlight how technology use, to some degree is interwoven with curriculum design and teaching strategies; indeed it is hard to separate them out and development of all three need to happen simultaneously.

### 7.5.2 Teaching Strategies

During the Cycle III / Phase I analysis, the data associated with teaching strategies were largely directed at future practice. For example, a typical response in the questionnaires was,

“Develop better ways of collaborating on-line between the schools. Staff and students to achieve inquiry based approach to education. Develop techniques to manage remote online groups.” (Beech)

This particular co-ordinator shows a more specific understanding of what needs to happen, compared to the comments made in Cycle II, which were more general. This progression in understanding, familiarity and perhaps increased confidence, may constitute the necessary steps towards pedagogic shift. However, there was no evidence that this or any other teacher knew how to achieve these aspirations from the Cycle III / Phase I data. The notion of ‘collaboration’ recurred throughout the co-ordinator responses. For example, some noticed how when collaboration between teachers takes place, teachers then perceive of projects as being more successful. To this extent, there is a difference from the Cycle II data, which revealed that most teachers were not collaborating in projects.

The data analysed during Cycle III / Phase II associated with teaching strategies were minimal although when it did occur, was detailed. For example, one teacher presented their rationale for incorporating emotional experiences after intellectual experiences as this fixes knowledge and ideas in the student's mind. The data also revealed that students were working with more autonomy and independence than in previous projects, suggesting that teachers were moving towards a more facilitative method of teaching. However, this approach did not work for all teachers. During the group discussion, there was evidence of some teachers discussing future teaching strategies that might still be employed to extend the project. This was initiated by one of the teachers through the following comment,

“We should do something with it like making conclusions or like learning lessons ... They must watch each others’ products and they should [general noise of approval from teachers] compare them in some way.” (Beech)

So although most of the data, including this extract showed teaching strategies being discussed in the future tense, this particular quote and the further discussion demonstrated a clear articulation of the strategies that the teachers might employ, rather than more general comments as found in the Cycle II or Cycle III / Phase I data analysis. Importantly, this quote also acknowledges that student learning needs to be presented in some form.

Teaching strategies were not discussed during the Cycle III / Phase III or IV data collection. This is most likely because the data collection focused on the second research question asked in this thesis.

### **7.5.3 Technology Integration**

The data analysis from Cycle III / Phase I suggests that the VLE is still a barrier for some who see it as “clunky” and too difficult to use in terms of course set up and permissions, for example. Many teachers seem to prefer Facebook and emails as these offer simplicity. However, as discussed in section 7.5.1 this raises questions about the era of ‘just in time technology’ conceptualized in micro blogging and apps, potentially leading to micro learning (Mosel, 2005). In the comments about technology barriers, two teachers talk about the chaotic nature of projects. However, some suggest that technology has been used as an excuse when projects do not work because of poor planning or lack of communication and collaboration between staff and students.

The data analysed from Cycle III / Phase II revealed the differences between teachers’ and students’ use and understanding of technology as demonstrated by this quote, “I think we are not thinking or speaking the same language sometimes [general sound of agreement from others]”. This could



then be a barrier to how web based communication technologies, particularly the VLE, are integrated by the teachers in an engaging way for the students.

### Pedagogic Shift

Pedagogic shift (section 1.2) can be seen as a change in teaching processes, which may or may not be transformational in nature. However, it is widely agreed (Mezirow, 2000; Cranton, 2006) that often such change is incremental and evolves over a long period of time. Such incremental change can be seen in the data analysed around the concept of technology integration. One respondent from the Cycle III / Phase IV interviews put it thus,

“It is very easy not to recognize the progress that has been made ... certainly in terms of the technology ... all of the people who are participating are using technology far better than they were five years ago. Although you might argue that this could happen anyway, I think this is largely because of ELvis.” (Maple)

The data collected in the Cycle III / Phase IV interviews demonstrated how teachers were integrating technology much more in the latter stages of this research than at the outset. For example, one interviewee talked about how two teachers are much more adept with technology now, than when the virtual international school first started. Although it is hard to prove whether this is a result of ELvis or whether it is associated with how the world has moved on in the last four years, the interviewee maintained that ELvis has played a central role in opening their eyes to new ways of working to enable them to progress, which would not have happened if they had not been part of ELvis.

There was general agreement in the Cycle III / Phase IV interviews that the VLE was not user friendly. There seemed to be a recurring issue of ‘lack of immediacy’ with the VLE. One interviewee put it thus:

“The notification system [in the VLE] is not that sophisticated, all it does is send an e-mail to say something has been updated. So then you click the link and what you get to is the home page for eTwinning and the message doesn't even say where the thing was posted so trying to find it is really difficult and time-consuming.” (Ash)

This excerpt supported by comments made by other interviewees, points to the lack of accessibility of the software. For example, software like What's App and Facebook have 'app' versions for mobile technologies. The chosen VLE (ITS Learning and then eTwinning) does not. However, two of the interviewees added that it is not just about the lack of immediacy which has prevented the full integration of the VLE into ELvis, rather it has something to do with processes, as this excerpt demonstrates:

"You could say that you need the technology to do the other [inquiry based learning] but actually the two go hand-in-hand. I know you can put one before the other and then you can say 'ah, well the technology is holding back the inquiry based learning'. But I think the two need to go together to make it work anyway. They have got to be totally interwoven." (Maple)

This quote demonstrates a higher level of understanding of the relationship between technology integration and teaching strategies, than could be found during the Cycle II data. This suggests that understanding of issues associated with technology integration have developed, although it is not clear if this just applies to this one interviewee or to all participants.

#### **7.5.4 Summary of findings in relation to RQ1: Are curriculum design, teaching strategies and technology integration changing over time?**

Research question one asked, 'Are curriculum design, teaching strategies and technology integration changing over time?' This section answers this question, by presenting a summary of the key differences in curriculum design, teaching strategies and technology integration between Cycle II (Identification of Key Themes) and Cycle III (In Depth Exploration of Key Themes).

##### Curriculum Design

The data analysed in Cycle III demonstrated a clear progression from Cycle II, as teachers engaged in an exploration of curriculum design, based on concrete experience of running projects. This resulted in teachers identifying key items that need to be in place for a project to be successful. For example,

there was general agreement that projects should be simple and flexible in design to ensure 'curriculum fit' and that teachers should have met before the project commences. Using concrete experiences in this way is a key stage in Kolb's reflective model (1984). The data also demonstrated evidence of collective project planning although concept checking was still needed if the project design was to be understood by all. This level of detail suggests a development in teachers' capacity to think reflectively to solve problems (Cranton, 2006). However, teachers did not engage in discourse about pedagogical models, conceptions of collaboration or the relevance of face-to-face meetings and there was confusion about the purpose of using web based communication technologies, all which may account for the wide variety of opinions in their visions of success.

### Teaching Strategies

Data analysed in Cycle II suggested that teaching strategies had either stayed the same or started to be explored. Some of the comments discussed student weaknesses, whilst others explored general future actions, both of which ignored articulating specific teaching strategies. In some instances, the data revealed insights on the teacher-student relationship, an under-researched area of study in virtual international schools, according to Hawkins *et al.*, (2010). Specifically, the data showed changes in the locus of control, differences between countries and the problems encountered engaging students across geographical boundaries of time and space. However, the data also revealed that most teachers are on the beginning of a journey, where they have raised issues with implementing new teaching strategies. This suggests that they are in the 'questioning assumptions and perspectives' phase of Cranton's model of transformational change (2006). Data analysed in Cycle III relating to teaching strategies were minimal although when it did occur was detailed and showed much deeper discussions that was evidenced in Cycle II, as might be expected from those engaged in transformational change (Cranton, 2006, Mezirow, 2009).

### Technology Integration

As well as revealing reasons why the teachers are not integrating the VLE into teaching practices, the data analysed in Cycle II suggested why students do not use it. The data also revealed how the VLE had been used, although this use was limited. Some teachers noted the continuing challenges with using the VLE, expressing a need for help. However data showed a progression in digital technology use between Cycle III / Phase I and II. As with Cycle II, data analysed in Cycle III revealed differences between teachers and students in their use of web based communication technologies. However, in Cycle III / Phase IV in particular, the analysis demonstrated how teachers are now integrating technology much more than before. This has resonance with Hall and Hord (1987) who state that technology integration is a process and not one single event, and necessarily takes time.

Thus, teachers' understanding of what works and what does not, in relation to curriculum design, teaching strategies and technology integration in a virtual international school has increased to a limited degree, over time. However, there is still evidence in the data of further issues, challenges and differences of opinion between the teachers related to curriculum design, teaching strategies and technology integration.

### **7.6 The Discussion of Findings Related to RQ2: What factors are inhibiting and/or contributing towards any change?**

The first research question specifically asks whether curriculum design, teaching strategies and technology integration are changing over the course of this research study. These domains, proposed by Vaughan *et al.*, (2006) denote tangible markers, which have been used to demonstrate a change over the course of this research. However, this research is also about the actual process of that change. The focus of this section of the data analysis therefore relates to the second research question, 'What factors are inhibiting and/or contributing towards any change?'

To explore this question the co-ordinators from each school were first asked during the Cycle III / Phase IV interviews (see Appendix 10), if they thought there had been any changes since the beginning of their involvement in ELvis. The question was deliberately left vague to allow what was important to them, to emerge. They were not asked to talk specifically about technology integration, teaching strategies or curriculum design, as the researcher wanted to uncover what they felt was important. The open question asked, 'Can you see a difference to where ELvis was at the start, to where ELvis is now and to where you want ELvis to go in the future? If there is difference, can you describe it?' This question was particularly important as virtual international schools are a new phenomenon. Evidence of the way they are set up and how a sense of community is built, will be relevant to others wishing to engage in such a process.

All of the respondents said there was a difference and that they had progressed in some way. This corroborates the findings in relation to RQ1. One co-ordinator put it thus,

"The way is the aim. There are a lot of paths and a lot of roads that we have used. We have also had aims and goals that we have set. But there are very different understandings, and that is the point. There are different understandings between countries, between school systems. So I think we have taken the route a little bit like a slalom. I think we have had a very long journey but a very good journey. When I remember our first meetings, my school didn't really have any contacts but now we have a good network." (Pine)

This quote was fairly typical and highlighted four main themes. Firstly, that the point of ELvis, is that it is a journey. It has been an intentional process of discovery and learning about how to work together, although most of the comments imply that they have only realized this latterly. Indeed one respondent describes ELvis as a 'discovery journey'. Secondly, there has been an acknowledgment that there are different perspectives and understandings between school systems and countries. Thirdly, they have created a strong network, which one respondent termed a 'community'. This sense of community is mirrored throughout the interviews as all of the

respondents talk about 'we' when describing ELvis, rather than 'they', clearly demonstrating their sense of belonging (Lazlo *et al.*, 1997). The last theme that has emerged from this quote suggests that change is perceived of as an external phenomenon. In other words, participants associate change with ELvis rather than an individual's conception of pedagogy. Although there is a lack of clarity on the impact of this perception, it does highlight an avenue for further exploration in how groups might learn and develop as an entity (Cranton, 2006; Nelson *et al.*, 2008).

The critical friend added one more point, "We maybe frustrated with it [lack of progress], in some senses we know that some things are not working well." This point highlights the expectations of experts, which may be set at a different level to the participants in ELvis, but it also demonstrates how change takes time, a point supported by both Cranton (2006) and Mezirow (2000).

In asking them to expand on their answers, they all talked about different issues, highlighting perhaps what the important points are for the interviewees. For example, the lead co-ordinator noted how he felt ELvis had not "come half as far as it should", identifying problems that impact on his ability to carry out his duties as project lead. The following analysis specifically looks at responses made in relation to the emerging thematic model of pedagogic shift presented in Chapter 6 including a discussion on further issues that were raised, which currently fall outside of the proposed model.

### **7.6.1. Change**

#### The change agents

Although Rogers, (2003b) discusses the various roles of change agents and identifies their various relations with others, he does not specifically discuss the characteristics that change agents require to carry out their roles effectively. The analysis of data in Cycle III has shown that those people who are seen as both central and successful in creating change in ELvis, are perceived by others to have certain characteristics such as flexibility and

open-mindedness, with personal drive and insight. Specific descriptions were given such as, “the constant and persistence of working, even if sometimes they’re disappointed by not getting enough answers from other people.” One person, who is perceived of as a change agent by others, said of herself that she actively tries “to imitate, what I mean is I try to take the positive things that I see ... or talk about ... and apply them to my own practice”.

### Facilitating change

One interviewee suggested that teachers being shown how to implement a new teaching strategy or technical innovation by other teachers, has more of an impact than when an outside person tells them, moreover another added that teachers are more likely to understand something when they see it in action. Both of these comments are in line with Black *et al.*, (1998) who also suggest that teachers need, “living examples of implementation, by teachers with whom they can identify”(1998:10). It was acknowledged that outsiders had helped up to a point, for example, one co-ordinator said, “Most ideas in our discussions I have received from [the critical friend]. That is a very important aspect of ELvis. We do need it”. However, it was recognised by most that teachers were more likely to learn from fellow colleagues, who had faced similar situations, had succeeded in trialling new methods, which resulted in an impact on learning.

The data also suggested that teachers are more likely to engage in group reflection during the face-to-face meetings “particularly around the informal conversations”. This was a view shared by most of the interviewees who added comments about how the days are intensive, enabling you to stay focused. It was suggested by some that if meetings only happen online, or *via* Skype for an hour, then the same amount of community building, reflection and progress cannot happen.

Most of the interviewees felt that reflection did happen, but that it was haphazard and informal and done as part of conversations with others. For example, one interviewee wrote, “ELvis changes the way you look at things so that is one thing. How much they reflect on what they do in ELvis is another

thing ... yes I think they do but mostly it is unwritten. I think the process is unconscious”.

For some time the critical friend has been talking about inquiry based learning. A guest teacher came to talk about it also, but it was not until some of the ELvis team went to see it in action at a school, that they really understood what it meant. One interviewee added that it was “really powerful when Bay saw it in action and I think he really got it and it changed the way he thought about how ELvis can work”. One co-ordinator said that the reason progress is slow is because, “teachers don’t want to change anything”. Another said, “people are naturally defensive especially if the situation is new to them”. When asked why people have been resistant to change, responses came back such as fear of change, fear of failure, fear it would not fit in with what their schools are trying to do, they have limited time, limited resources, they can not afford to make a mistake. They have not got time in their curriculum to do extras.

#### Enablers to facilitating change

The analysis showed how some of the co-ordinators appeared to receive more support than others from their colleagues in school, where they were able to ‘bounce off’ ideas and discuss aspects of ELvis. Other co-ordinators suggested that they got most support from their family members, who were more experienced with web based communication technologies. Three interviewees commented that a template created by the critical friend in conjunction with the co-ordinators for the projects, had helped to some extent, but not with the use of technology.

#### **7.6.2. Community**

Laszlo *et al.*, (1997) describe community as “a group of two or more individuals with a shared identity and a common purpose committed to the joint creation of meaning” (1997:7). Many of those interviewed alluded to aspects of community, through terms such as identity, group dynamics,



collaborative learning and lastly the use of the term, 'we' which is indicative of community building having occurred.

### Identity

Although people found it difficult to describe an ELvis identity, most people felt that a sense of community existed to some degree. For some it was "a feeling of being part of a common thing", although they all found it hard to identify what the 'thing' was.

The data suggested that the more involved someone becomes in ELvis, the more there is a feeling of identity or sense of an ELvis community. Analysis of Cycle III / Phase IV data shows that those people who were recognized by the rest of the ELvis team as being proactive members, demonstrated that they felt fully integrated in the virtual international school. For example,

"...we have built up personal relationships and I think we have learned a lot by now about the schools abroad. There are schools that I have now visited several times. So all of this creates bonds and human relationships, which are important as we are a team." (Beech)

However, this does also stress the importance of face-to-face meetings, which has financial implications for anyone who might wish to set up such a school. For those who are perceived as less active in ELvis by the group, their answers as to whether there was an ELvis identity were more negative.

Some of the interviewees use the term 'community' and talked about how they have a better understanding of how to collaborate with people abroad, but that this was only achieved because of the face-to-face meetings, "we need face-to-face meetings and I think this is the main source of the community." Only one interviewee suggested that they could create ELvis entirely online with no face-to-face meetings.

The 'Memorandum of Understanding' (MoU), (see section 7.6.3) described the intentions and expectations that the schools have in coming together. This was signed between the head teachers. Some respondents commented on

how this “helps people feel part of this group”, what Laszlo *et al.*, (1997) term ‘convergence’. However, ELvis and the individual schools are still perceived as separate places, as identified by this quote, “For me it is school work first, then ELvis, and then other international contacts. Although sometimes I feel I live for ELvis”. One of the interviewees suggested that this is because the MoU was strategic but not operationalized, adding that they have not yet properly explored different cultures of learning, values or attitudes across the different schools, what Laszlo *et al.*, (1997) term as ‘divergence’.

One interviewee commented on how teachers that have joined ELvis later, have taken longer to become active within the ELvis community. There were no suggestions about why this could be. For example it could be because there is no induction, it could be to do with the complexity of ELvis and not knowing how to get involved, it could be a language issue or another reason still, such as they feel the school is already established and there is no one to welcome them into the school. This has resonance with the role of facilitators who act like hosts at a party (Ultralab, 2002).

### Isolation

Two people mentioned that they felt isolated. One in relation to ELvis as they tried to contact people and received no replies, the other person felt isolated with their own school, where they received no support at any level.

### Collaboration

The analysis of the Cycle III / Phase IV data did not yield any evidence about collaboration, even though one of the questions asked how well co-ordinators worked together online. The only responses given about collaboration were about superficial communications, students engaging in social learning and networking, for example, “Collaboration is spasmodic and reactive, mainly around email communications rather than real work and learning”. The lack of collaboration mirrored the continued lack of online activity in the VLE. To some extent, this maybe related to the lack of perceived purpose for collaboration. As discussed in Chapter 3, section 3.3.6, one such purpose might be to collectively engage in ‘reflection-in-action’ (Schön,1983) however,

without a model or framework, such reflection is likely to be ineffective (Jones, 2014) and in the absence of 'scaffolding', the teachers have not engaged in such a process.

### Communication

The analysis suggested that co-ordinators did not communicate enough, working spasmodically, sometimes responsively, rarely proactively, except for two or three people who formed the 'skeleton of ELvis', without whom the virtual international school would probably cease to exist. There was general agreement about who these two or three people were (the characteristics of these people are discussed in the section on 'who are the change agents'). It was noted by one person that there were many co-ordinators who only work well face-to-face and as soon as the meetings are over, they cannot work online adding, that "if there is no communication between teachers, then you cannot do anything". This same interviewee added "and I don't think communication depends on the platform. It is no different between the ITS Learning or eTwinning". With people from different contexts and cultures, communication can also be misinterpreted. For example, the data showed how one co-ordinator who was new to the project had explained the inquiry based learning approach that they used at their own school. However she was new to the project and it was noted by another co-ordinator that, "she appeared to be more or less lecturing us. I don't care about being lectured, but other people thought she was feeling superior, but I don't think she was. She was just very enthusiastic. She made the wrong impression with people".

### Face-to-face / online

Only one co-ordinator felt that relationships and community could be built online. As most of ELvis has to take place online due to the distributed locations of the schools, this could be a barrier to enabling change. Others said that it should not matter, but acknowledged that it did make a difference and more than this, even now people are not working on ELvis between meetings and this is a key barrier to moving things along. Some people were most candid with one respondent adding, "I am as guilty of that as anybody ...

I only get to do stuff when I know a meeting is coming up. ELvis is not as core as it should be in schools. It is still an extra.”

The data did show however, how face-to-face meetings enable teachers and students to experiment with new pedagogical approaches, as identified by this co-ordinator, who describes their view of the pedagogical approach,

“The pedagogy is perhaps like in School ID:10, towards learner centred pedagogies. The learner should organise learning themselves. For me this is the aim [of ELvis]. I want them to have more responsibility for their learning, not sitting in the classroom waiting for the teacher ... Face-to-face it does work, we saw it in School ID:9”. (Pine)

Although this interviewee describes a pedagogical process they have seen working in an ELvis face-to-face situation, they are not able to replicate this in an online ELvis project.

For ELvis to be successful the data suggest that there needs to be regular communication for both projects and for building community. For example, one participant said that face-to-face meetings are “the main source of community, we need personal contacts”. However, it is unclear why this might be the case. For example, is it because of issues to do with language or national / local cultural differences or perhaps an unfamiliarity and lack of confidence with online collaboration. The latter could be addressed with the introduction of a skilled facilitator (Ultralab, 2002). One interviewee said that face-to-face meetings have to take place because people need more than one day to think about the things that are discussed. This was backed up by another respondent who said that, “I know for me that sitting on my computer and having all these lists and schedules of things I have to do and getting visits from my teachers and my students, it is just difficult to concentrate on something else”.

However, it could be argued that the face-to-face meetings are relied upon to carry out the work as “a week after meetings, things so start to stagnate again, because normal life at school kicks in.” (Ash). If there were no face-to-face meetings, then the participants might be forced to work collaboratively

online. One participant commented that if a project is going to work, teachers should have met first. Although not picked up by others during June 2012, this idea was echoed extensively during the Skype interviews in June 2013.

Another teacher talks about the intensity of the face-to-face meetings and why he thinks they are important.

“Now we have these two days, which are dedicated to this meeting of ELvis, and this perhaps makes us more reflective, particularly around the informal conversations we have next to the actual agenda discussions. It's in these in between meetings where I talk to other people about how they teach and what styles and pedagogies they use.” (Ash)

### Group dynamics

Five of the seven co-ordinators now see each other outside of ELvis, with one adding that “I enjoy seeing colleagues as friends during the holidays visiting each other, not only working together”. Interviewees noted how important this was, with people getting to know each other better resulting in them to be more confident in sharing knowledge, working and learning together.

However, one person added that, “it takes time ... [and] the trouble is you get confident with somebody and then they move on.” Another said that within meetings, not enough time is given to exploring pedagogical differences and perceived it as “a really big problem”.

It was suggested by one person that relationship building in the face-to-face context had been important, even though they had signed up to the notion of a virtual international school,

“I think we must emphasise how important it is for personal contact between these people because although it started out as something that could operate online, it was hopefully going to be entirely online, that personal interaction had a big impact on what they adopt and how they adopt it, because one person reassures the other that things will be okay if you try it.” (Maple)

### Learning together

One interviewee suggested that ELvis was a catalyst for change in their school, “there are some single projects, which are changing the learning and teaching but it is also a very slow movement”. This occurred as the co-ordinator shared lessons learned with other teachers in the same school. However, this was within one school and he added that he did not know if or how things were changing in other schools. There is no evidence that there is any structured process for dissemination of what works and what does not across the ELvis schools. Indeed, there was an absence of data associated with how teachers make sense of their experiences, which Cranton (2006) argues should be performed through questioning the beliefs and assumptions held historically and is an essential process for transformative learning or change to take place.

This lack of articulation of learning between the teachers is problematic and supports the view shared by Clarke *et al.*, (2005) that the limitations currently identified with virtual schools are centred on organisational or financial considerations rather than teachers’ conceptions of pedagogy, or changes that teachers might need to make to work in virtual schools.

### **7.6.3. Leadership**

During the Cycle III / Phase II data collection there were wide ranging comments made about leadership, which were often associated with other issues, suggesting a relationship between leadership and its influence on ELvis. During the June 2013 interviews, differences in leadership styles between the countries were acknowledged. For example, one person suggested that some leaders “just want to maintain the status quo” whilst other leaders have a clear vision of where they want to go and are aware of several paths to get there and are able to select the right one. However, whether these comments identify leadership differences between countries or just differences between leaders is unclear and needs further research.

Leadership teams in schools also varied. This could be a country specific issue with one interviewee noting how in Norway the structure appeared flatter whilst in Italy there was a definite hierarchy. However, it could also be due to differences between school leadership teams irrespective of geographical location as this quote suggests, “They have different management, including how much control they have over their own work, how much recognition they get for what they're doing.”

### Leadership from schools

Generally speaking, it was felt that head teachers had ‘bought into’ the concept of ELvis at some level. This was demonstrated in the signing of a Memorandum of Understanding (MoU), in which school leaders had agreed to work together and continue to bid for money to sustain ELvis over the longer term. However, Fullan *et al.*, (2014) suggest that ‘buying in’ to the concept of change, (a concept upon which ELvis is based) is not enough for change to happen, rather “leaders who become partners in the deep learning processes, and who foster collaborative, risk-sharing cultures” (2014:iii) are more likely to develop a culture of change in their schools.

In ELvis, beyond the MoU, managers had incentivised and encouraged teacher engagement in ELvis to different degrees across the partnership. Only one co-ordinator was released from teaching for one whole day to pursue work in ELvis, but he was also expected to work on other international projects, exchanges and contacts during this time. Some teachers received nothing and a few had one hour per week away from teaching. For those who had little to no time, they mostly did not have any other incentive or reward for taking part and this impacted on the amount of time they were willing to give to ELvis.

As leadership priorities in schools have changed, so has the involvement of schools in ELvis. For example, in one school, there had been very little interest from the head teacher, resulting in no support from the leadership team or from colleagues in school. This had made it hard for the ELvis co-ordinator to get involved in ELvis beyond the minimum. However, the local

education region has now introduced a certificate called Europe School, in which the head teacher is interested. The same head teacher is also writing a chapter in a book on Europe. The interviewee suggested that there may be a link between the two and how ELvis has moved up the agenda in school resulting in a removal of obstructions and an active interest from the head teacher, leading to other teachers beginning to engage and support the co-ordinator. Indeed the data suggest that engagement from school leadership teams has a direct impact on teacher engagement in ELvis, although just being interested in ELvis happening in school is not enough, as demonstrated by this quote:

“Leaders need to encourage this [teacher engagement], for example two different departments at my school started on some projects but they fizzled out, I think due to time pressures from school staff. They also ducked out because they were not curriculum related.” (Spruce)

In this particular school, the head teacher has been supportive in principle, attending ELvis meetings himself, sending staff to face-to-face meetings and asking that projects are run in his school. However, there was still a lack of engagement because no time or other acknowledgement was given to encourage staff to participate. If there is no drive from the school leaders to make ELvis a high priority, then teachers believe there is little time to work with ELvis due to other school pressures.

Where leadership from schools has been evident, co-ordinators have more fully engaged in ELvis. For example, in two of the schools which are very active in ELvis, one says she talks with her head teacher “quite a lot and she tells me what she thinks, she supports me” and in the other, a co-ordinator notes how there is a “lot of support from” the senior manager.

### ELvis leadership

Leadership within ELvis can be viewed on different levels. There is an ELvis Guiding Coalition, a team of co-ordinators (one per school) and leadership of the individual projects.



The Cycle III / Phase III data suggest that the leadership of ELvis has been difficult for the ELvis Guiding Coalition, as they have largely been left to take responsibility for ELvis, with the other co-ordinators being more reactive than proactive. Speaking of how well the co-ordinators work together in ELvis, a respondent suggested, that “Ash has to communicate and drag it out of them more often than not” adding that,

“He can only work with schools if they are prepared to get out there and roll their sleeves up and I think the success of the school is entirely down to the leadership within it, the people who take responsibility within it”. (Maple)

Most people interviewed in Cycle III / Phase IV agreed that Ash, a key figure in the ELvis Guiding Coalition, was central to the success of ELvis. Some went further and suggested that without him, ELvis might not have worked. When asked about his personal qualities, which make him so important, the following quote was typical of the replies,

“He is very open he is very personable and gets on with people but at the same time he can be frank with people ... and he's driven, driven to get everybody together, he is driven to be friends with people involved.” (Beech)

Others describe him as having patience and passion, he is supportive, helpful, taking initiatives and always pushing. Although he is not an ‘early adopter’ (Rogers, 2003b) when it comes to technology, his wife is and she ‘scaffolds’ him. To this extent, she can be seen as a ‘knowledgeable other’ (Vygotsky, 1930/1978), but only in the context of technology adoption and not in the adaption of technology for educative purposes. He is very determined, directs people and holds everything together. Ash says of himself, that he flexible, has good organisational skills, knows when something is not working and is prepared to change tack, likes to be challenged and be taken out of his comfort zone.

The interviewees were asked how well the co-ordinators worked together as a team. Replies fell into one of two categories. Either they worked

spasmodically, sometimes reacting to a communication or not as a team at all. The co-ordinator team was summed up by the following two quotes, “People co-ordinate their own school, they still think in terms of their own school” and “I don’t think anybody really takes initiatives”. This has important consequences for ELvis. Research shows that sense of belonging is an important motivator in teamwork (Ephross *et al.*, 2005). This can be demonstrated in one co-ordinator, who was perceived by all those interviewed, as being “the skeleton of ELvis” clarified as someone who always works to deadlines and completes the tasks set, proactively engaging in ELvis. This co-ordinator says of herself, “For me, I feel as if ELvis was a real school and sometimes I feel more part of ELvis than I do part of my own school.” There is a correlation here between a sense of belonging and motivation to do the job.

#### Leadership of projects

Respondents generally agreed that the leadership of projects within schools and across ELvis has been haphazard. Some projects have been well led, whilst other projects have faded due to lack of proactive leadership. In trying to find out what barriers inhibit project success, interviewees suggested lack of initiative and pro-activity from those who put themselves forward and no clear line of responsibility, with some of the interviewee responses linked to lack of support from leadership in schools. In some schools there has also been a perception from colleagues that the co-ordinator will lead the projects rather than the subject specialists involved.

However, in some replies there was a view that people just turn up at meetings because they like to travel, get out of school and see new places rather than are really prepared to get involved in the work, as these two comments point out,

“There are other colleagues who come to the meetings and say they want to do lots of things but they disappear until the next meeting, when they reappear. Why?” (Beech)

“And I’m afraid that some of those are just there for the trips.” (Maple)

There is some support for these comments from the data collection in Cycle III / Phase III, with nine out of the sixteen comments on why they became involved in ELvis, being about 'changes in daily routine', 'meeting friends and colleagues', 'links with other schools' and 'opening of minds and horizons'. None of these comments appear to be concerned with learning about new pedagogical approaches, or working collaboratively to innovate or shift pedagogies. Where projects have been successful, defined by high levels of student engagement and the use of new pedagogical approaches, interviewees noted clear project leaders who are "reliable, also have flexibility to work around things, are problem solvers" and "a good organiser ... somebody who has the energy and the know how to make something happen". These personality traits are similar to those mentioned in the section in the discussion about people who are more likely to engage with ELvis.

#### Leadership from students

Although the aim is to allow students to lead projects within ELvis, this has proved difficult outside of the face-to-face situation. One interviewee suggested that this was because the students do not have the capabilities to work in a self-directed or independent manner in normal school, so 'scaffolding' is required with short tasks and deadlines. The data also showed, that to varying degrees, the different school co-ordinators have been able to motivate student 'ambassadors' within their respective schools.

#### **7.6.4. Perspectives**

During Cycle III / Phase IV, all of the interviewees acknowledged that sharing and understanding perspectives was crucial for ELvis development. However, they were also all asked if enough time had been given to exploring each other's perspectives. Two out of the six said that this had not been done; the others said that it had been done, but only marginally. This may be because there was no one employed to 'scaffold' (see section 3.3.4) the teachers in this process, which is widely recognised as necessary (Vaughan *et al.*, 2006; Ley *et al.*, 2012) in order to explore different perspectives. It was commonly agreed across the board that the complexity of ELvis and the lack of time at

face-to-face meetings prevented discussions on perspectives from taking place. Implicit in this, is a belief that discussions on perspectives cannot take place online. One interviewee explained the complexity and lack of time thus:

“We have so many things to think about that sometimes we can forget something important. We focus on things like the dates of the next meeting and spend a lot of time on that, which of course is important but there are so many things to think about, to write about that sometimes we then forget about the essentials.” (Beech)

Others suggest that discovering colleagues’ perspectives, particularly concerning conceptions of pedagogy, has happened by accident, for example, “We’ve not really done this, we’ve accidentally stumbled across this whilst we visit each other’s schools”. This response also demonstrates that sharing perspectives only happens face-to-face. One interviewee was able to articulate the importance of understanding different pedagogical approaches thus:

“If we think of the approach they have in School ID:10, they are completely learner centred and our approach in School ID:2 is very much teacher centred ... So when we cooperate with colleagues abroad we have to take this into account. It becomes more difficult, also for the students.” (Beech)

This co-ordinator noted that it is not just the teachers who need to be aware of the differences in conceptions of pedagogy, but that the learning expectations of students from different countries will also vary and this needs managing, in terms of engaging the students and also in how projects are planned. This also demonstrates that although time has not been specifically given to explore pedagogical approaches in different schools and countries, there is a conception that they differ. This was demonstrated in other interviews and suggests that as the schools have worked together over an extended period of time, informal discussions and visits to each other’s schools, have enabled them to view differences and similarities in pedagogical approaches. However, the question arises: if they had done this formally, allocating specific time to discuss conceptions of pedagogy, would projects have been more successful earlier? Or did the participants still need an extended time to work together to really understand how to make projects successful in ELvis?

Some of those interviewed talked about how they have developed professionally, as a result of their involvement in ELvis, for example one person said, “I have a better understanding of European subjects, about collaborating and communicating with others’ schools and with other people from abroad.”

Other interviewees suggested that some teachers participated in ELvis for school exchanges and the benefit of individual schools, rather than to collectively engage in the development of a virtual international school. This is demonstrated by comments such as, “I get the impression that some schools still think they are in an old fashioned Comenius Project and therefore they have some nice visits abroad etc ...”.

The way in which the project money was spent, was left up to the individual schools. However, funding accountability has now been changed since the end of EU Comenius funding. According to the Erasmus+ Programme Guide (2014) there are much tighter controls and audits related to finance in the new funding programme open for schools (Erasmus+).

### Motivations

During the Cycle III / Phase III data collection, teachers, co-ordinators and head teachers were asked directly why a) they and b) their schools wanted to be part of ELvis. In response to the first question, over half mentioned personal development. There was a variety of other answers given, for example, head teachers were motivated by improving both their school and their own position. Co-ordinators were motivated by the change of routine and teachers were motivated by the links they were making with other schools. There were some similarities between the responses to the first question - why they - and the second question, - why their schools - have joined ELvis. Staff development was mentioned again as was opening minds/horizons. However, there were more responses focusing directly on students as well, for example, creating global citizens, student learning, students practising foreign languages. In spite of this, student learning itself was rarely evidenced

in focus group discussion or interviews, as discussed in section 7.5.1 of this chapter.

For nearly all of those asked in the Cycle III / Phase IV interviews, their motivations for being part of ELvis were associated with intercultural awareness raising. This is both for developing students with a global outlook, improving language skills and developing friendships across Europe. For example one interviewee said:

“I want my students to get an idea of what Europe is, experiences of other cultures being in different conditions. To open their minds, learn tolerance, getting contact to others and broaden their horizons, particularly getting them to learn to work together.” (Bay)

There is a focus in this response about the importance of the face-to-face element and little consideration of the online aspect of ELvis, which was mirrored in most of the replies. This suggests that although this is a virtual international school, the face-to-face elements are still perceived as the most important aspect in respect to student experiences. ELvis was also viewed as important for the teachers as the same respondent goes on to explain:

“I have begun to see how important Europe is and how important relationships are and how we can get in contact with colleagues and learn from them, both pedagogical and as humans.” (Bay)

This view was widely shared across those who were interviewed. Thus ELvis can be seen as a catalyst for informal personal development, although there has been an emphasis on the face-to-face aspect of the virtual international school rather than the online element, as demonstrated by this quote, “I like to see things from different points of view, I like to meet people from different countries who can give me the opportunity to look at things from a different perspective”.

Sustaining motivation over the lifecycle of the project has been difficult, as one teacher noted, “At the moment I think we have people who are not really motivated to be part of ELvis”. Another interviewee suggests that at such

times, “some of them are dragged along and think they have to do certain things to stay in the party”. It was unclear from the data why motivations changed.

### External drivers

Some of the external drivers have indirectly contributed to continued school participation in ELvis, which has potentially given participants more time to explore different strategies for teaching and space to experiment with technology integration and curriculum design. For example, it was widely acknowledged amongst those interviewed that parents felt ELvis was a valuable activity, which made the school look more appealing. This incentivised school leaders to support the continuation of ELvis in their schools. Paradoxically, this did not mean that the teachers were more incentivised to take part; one teacher said that it did not make a difference to the teachers. This suggests that the leadership vision of individual schools did not necessarily influence the micro-realities of school life. Mawhinney (1999) suggests that problems can arise “when macro-directions meet micro-realities” (1999:159). Such problems were alluded to by a number of teachers, for example, “managers are always a bit difficult”.

One person noted that some parents are more concerned with student achievement and do not acknowledge the part that ELvis can potentially play in this, suggesting that conceptions of educative purpose are deep rooted. This view is supported by Habermas (1972), who suggested that deep penetration is required to help people question their underlying assumptions. Assessment was also mentioned by another interviewee, who said that,

“the thing that I think drives the education system is examinations ... and all the countries have different forms of examinations. They all have different systems.” (Maple)

The implication here is that these differences can impact on the ability of pedagogic shift to take place amongst the group. He added that the differences between countries created a barrier to ‘curriculum fit’ in project design.

Change may have happened more quickly if some of the external barriers had been less. One interviewee had particularly strong views regarding the impact of external drivers on the ability to carry out work in ELvis,

“You can be as enthusiastic and innovative as you like, but if the people who pay you and the people who organise the world around you aren't supporting you, then you are wasting your time ... I mean why should you put yourself out to simply fail because the system will make you fail. The school systems are established by governments and if you move outside that, then ultimately you are deemed to failure.” (Maple)

However, it was noted by several interviewees that school systems are going through changes as a result of local and national policy initiatives, particularly in the Netherlands and Germany and as a result, there was an alignment in both ELvis and the national / local policy aims. For example,

“One of the schools that has changed the most in the last two years is School ID:4. ELvis and the policy in their state have coincided more or less in seeing to it that teaching is far more student centred and far more cooperative than it used to be. I think this is also similar in School ID:5.” (Maple)

The way Comenius has been set up was itself seen by one interviewee, as a barrier to change because of the tight timeline between funding start and finish dates,

“We currently have two years and it's just not long enough. You promise to do something and you want to make this promise come true, so the first year you try to get things on the road and by the second year you already thinking about funding for the following two years, we don't have any time really, to work on what you really need to be doing.” (Ash)

He went on to explain how this had led the ELvis group to be outcome rather than process driven, which is at odds with change theory, which is about process (Cranton, 2006; Mezirow 2009). Another issue related to this, is the way funding has been given to the schools from Comenius. It was noted by one interviewee because of the global financial crisis, everything has become 'more difficult'. Involvement in ELvis should therefore be positive, however



another teacher mentioned what others have alluded to but not articulated so clearly, “So each school, likes to get the money from the EU – but how to spend it, we need it for travel, but we also need to spend it for our schools.” This suggests that some monies might be used for other things, not just ELvis, thus creating a barrier of ‘lack of resources’ preventing the aspirations of ELvis group becoming a reality. Moreover the money that they do get appears to go on travel, rather than investing in other areas which might have improved curriculum design, teaching strategies and technology integration in the virtual international school, namely staff professional development, something which over half of the interviewees said was important to them in the Cycle III / Phase III data analysis, but has not formally taken place.

It might be the leaders need to strategize collectively on how to pool the money effectively for such things as professional development. However, from the data, there did not appear to be a clear plan.

#### Different cultures

During the Cycle III / Phase IV interviews, there were mixed views regarding the extent to which different cultures inhibited change. Generally cultural differences were seen to exist, but on different levels and to different degrees. For example, some of the interviewees noted cultural differences associated with different countries with typical responses such as, “it’s actually a very German thing to always see problems”.

However most of the views expressed, regarding the slow pace of changing pedagogical approaches, were related to different cultures of learning. One interviewee said that these different cultures of learning were not country specific, “I get the impression that if the school has a similar culture, it doesn't matter whether they are in America or Europe.” However, other interviewees felt that the country cultures directly impacted on the cultures of learning, for example,

“In Italy and I think sometimes in Germany they tend to be very theoretical, with very little practice, unlike countries like the Netherlands

or England where you do a lot more practical activities. So when we cooperate with colleagues abroad we have to take this into account. It becomes more difficult, also for the students.” (Beech)

The last comment about the students was mentioned during Cycle II, where a teacher said that the Italian students did not perceive learning in ELvis as “real learning”, because it was so different to what they do in their normal lessons. This presents a challenge to those teachers who wish to use ELvis as a catalyst to change the pedagogical approach used in their own schools. However, one interviewee suggests that it can aid change explaining that,

“Often students who come from other countries from abroad they come to our school and they say we can’t do this there is too much responsibility, but when they experience there is an outcome there are some results and students can work, although there is not always a teacher behind them then maybe this gives the possibility to teachers that they can change their pedagogical style. This is what I expect from a project like ELvis, that we can learn from one another that we can understand how they work.” (Bay)

### Personality types

Cranton (2006) suggested that people can react differently to disorienting events and that this may be associated with personality types. To some extent this was supported with evidence from the data analysis where several comments were made, associated with the types of people who are more likely to engage in virtual international schools, embrace change and make them a reality, although no direct reflections were evident in relation to disorienting events. Instead, interviewees noted similar characteristics in these people, for example those who are reliable, flexible, open-minded, problem solvers who like to be challenged, think objectively and like to see things from different perspectives. There are similarities here, with those associated with Change Agents as described by Fullan (1993). One interviewee, who was considered by most of the others as someone who has embraced the challenges in ELvis said of herself, “I try to imitate positive things that I see and apply them to my own practice”. Two interviewees also suggested that their younger teachers, especially those who are newly

qualified are more keen to get involved, but that often their heavy workloads as they gain expertise in their profession, inhibits their involvement.

### Conceptions of time

The issue of time has been a recurring theme throughout the data collection in all phases. During the Cycle III / Phase IV interviews, the co-ordinators were asked if and how much of an issue time had been. One respondent saw it in two ways and this view was shared by others: "I think time is a big issue, but it's also an excuse, a justified excuse, but it can also mean I don't feel like doing that". Other points of view were put forward, linked to leadership, suggesting that time is an issue because they still view ELvis as 'an extra' and it has not been embedded as part of what teachers do in their school. Another issue regarding time concerns the logistics of running projects. One respondent put it thus,

"We don't have much time for projects, we don't have time corridors in the school year in our own schools. All the holidays and examination periods in all schools are different and get in the way of being able to run projects simultaneously across ELvis, it is a real problem." (Pine)

Others agree with this view, however, one interviewee said,

"Well of course it is an issue, but it really depends on you. For example if you want to be paid, then ELvis is not for you (laugh). If you are prepared to spend time on something you consider worthwhile, then ELvis is for you. But of course these are the two extremes because in between there are people who are able to spend a certain amount of time on a project but they don't like being involved too much. And we cannot expect everybody to be involved in the same way ... I think I can manage my time very well. It is a problem sometimes when I have a lot of tests to mark, but I can usually manage because I arrange things in a way that when I have ELvis I don't have too many other things to do." (Beech)

This comment shows how there is a relationship between time and motivation, where for some, money may be the connecting factor and for others, altruism. It also demonstrates good organisational skills from this particular teacher, which are used to overcome the potential barrier of time.

The varying viewpoints discussed in this 'Perspectives' section demonstrate the complexities associated with different beliefs and attitudes, which inhibit and or enable pedagogic shift in a virtual international school. Although Cranton (2006) suggests that questioning perspectives is central to transformative learning, she adds that there are few resources available to foster transformative learning. In spite of the different perspectives towards pedagogy, either inherent in teachers or school systems, ELvis is generally perceived as a catalyst for change by those involved. Indeed one interviewee noted that, "maybe a project like ELvis helps teachers to overcome the barriers that they have within their own countries". In other words, in itself, it is a tool for change. However, there has to be an 'openness' for teachers to want to change. In one school, teachers refuse to use mobile technologies in their lessons because, "they can't see what students are doing with them and they think that maybe they are playing games during lessons". This last quote demonstrates the long journey some teachers need to make to embrace the approach that ELvis has been set up to enable.

### **7.6.5. Technology**

The ELvis critical friend (see section 1.4) suggested that you can not harness technology without incorporating inquiry based learning and that you can not use inquiry based learning without harnessing technology as the two were inseparable for pedagogic shift to occur, adding that they "have got to be totally interwoven". There is some synergy with this viewpoint and that of Fullan *et al.*, (2014) who suggest that in what he terms 'the new pedagogical model' technology is "pervasive and it is used to discover and master content knowledge and to enable the deep learning goals of creating and using new knowledge in the world" (2014:3).

#### Process of technology adoption

Technology adoption is a journey (Sherry *et al.*, 2000; Dexter, 2002; Rogers, 2003), which according to the data analysis, some have entered into happily whilst others have been more reluctant. The journey of technology adoption was described by the critical friend thus:

“If you think about the diverse range of abilities and skills that they had at the beginning, I still think they have come on a long way. Some of them were even having difficulties using a computer. For example what's RSS, how, why do it? They hadn't even got a clue how to find their way round a website, some of them. Some of them had never even used e-mail.” (Maple)

However, in discussing the journey more generally, one of the co-ordinators reflected that,

“It is not the pedagogical processes, which have changed ... what has changed maybe a little bit is, um, a certain way of maybe being open-minded to technology and it is a question of how teachers are working with that.” (Bay)

This type of insightful comment was not present in Cycle I (Pilot Study) or in Cycle II (Identification of Key Themes).

### VLE barriers

With regards to data specifically about the VLE, a theme has emerged from the analysis about the relationship between the ease of use combined with how that technology ‘fits’ into a daily routine i.e. the normalisation of technology and its use (May *et al.*, 2009). For example, some respondents felt that the VLEs were too complicated, with too many places to visit and ways to ‘get lost’. Some interviewees found that it was just another place to go to in an already busy daily schedule, for example,

“I would then have to look at my Gmail every day, my normal mail every day, I have to look at the school mail every day, which I can't import into my normal mail folder. I have to look at the VLE for the school and then there is the one of ELvis. And the notification system is not that sophisticated, all it does is send an email to say something has been updated. So then you click the link and what you get to is the home page for eTwinning and the message doesn't even say where the thing was posted, so trying to find it is really difficult and time-consuming.” (Ash)

Aligned with this, was the lack of immediacy,

“Using Facebook communication works easier it works faster it's about communication. Everybody has What's App or Facebook. It is part of our daily life. For eTwinning you have to open the site, you have to login, you have to look... I think the problem is there is no direct communication. It is very seldom that other colleagues or other students are on eTwinning at the same time as you, it's just not somewhere we visit on a regular basis. But with Facebook it is quite different people are only a click away. If you leave the post, it's immediate response that comes back. For example yesterday I was teaching the history course, and during the twenty-minute break I put a link in the Facebook page. Within two min during a coffee break I had a 'like' on that link. One of the students had seen it during the coffee break.” (Bay)

Other data suggested that minor issues that occurred could put people off using the VLE for good, for example “minor barriers, getting students to login etc, minor issues like this can stop people from learning”.

One person summed up the barrier thus: “We need to be logging on every day and we just don't have that sort of time.” For most people, the technology was new and the navigation within it was too complex. This, along with busy teaching schedules and lack of time/acknowledgement from school leaders for the required effort, resulted in a downward spiral of non-VLE use. In other words, a lack of understanding of how much time is required for pedagogic shift to take place, led to a lack of familiarity on how to technically use the VLE, which then prevented the teachers from thinking about and using the tools in the VLE, pedagogically.

The *Horizon Report 2014* shows how people favour technologies that are seamless and ubiquitous. It was not therefore surprising that the data analysis showed that some people just did not like using the VLEs as it was “not part of everyday life”, it is “artificial” and the way to get there is “too far away”. This suggests that there is potentially a need to develop more ‘realistic’ technologies that combine immediacy with the ability for participants to engage in deep learning. However, two interviewees suggested that the issues that people have with the technology are an excuse for not wanting to do something.

Some teachers are using other technologies such as emails “I prefer the good old-fashioned email. At least I get it, I see it and it is obvious, and I can reply all” and Facebook. However, not all teachers’ felt that they should use Facebook, “I don't think we should use Facebook, I think it is for entertainment”.

Facebook in particular appeared controversial with one person suggesting that the use of it had made it harder for people to use the VLE as demonstrated by this extract from the data, “Facebook is a parallel technology and this causes problems because people went there rather than going on ITs Learning or eTwinning.” Other’s suggested that this was people “voting with their feet”. In other words, they chose to use the technology, which was easiest for them.

#### **7.6.6. Other Factors**

##### No science subjects:

An EU funded project called A Transnational Appraisal of Virtual Schools and Colleges, published their final report (VISCED, 2013) looking at the key policy opportunities of virtual schools in the EU. They noted how the Commission has provided on-going support for Science, Technology, Engineering and Maths (STEM) subjects, because of a key concern that as a group of nations, the EU is not producing good enough skill sets in young people across the STEM subjects. There was an implication that virtual schools provide an opportunity for promoting STEM subjects. However the findings in ELvis suggest that this might be problematic as demonstrated by this quote:

“But there is something I often think about, that in this project, there are very few teachers in scientific subjects. Why is that? I don't know, I just don't have an answer. I don't think it is a problem of language however. It could be that in my school, but generally that would not be the case. It could be a personality thing, the sorts of people who want to become scientists. Maybe if you're involved in the humanities, you are more open-minded (laugh). Maybe we are more open to interpersonal relationships.” (Beech)

This demonstrates a potential issue incorporating STEM subjects into a virtual international school. Indeed, there was only one project in ELvis, which was scientific. This was the Solar Panel Project, which ran during Cycle I (Pilot Study) and this was considered by nearly everyone involved as unsuccessful, (see section 5.5).

### Learning

The co-ordinators themselves highlighted a silence, that being 'learning'. For example one co-ordinator said, "Sometimes I think ELvis is a big thing, with a lot of organization, a lot of ideas, a lot of techniques, but it is Euro Link virtual international school and for me school means learning." Another co-ordinator adds, "we didn't discuss it, we didn't discuss it, really I think we didn't discuss what 21st century learning is I think".

In the data collected over the course of this study, student learning or learning outcomes of projects were never discussed. Teachers talked about what students 'should do' or 'will do' rather than what they hoped they will or had learned. In one of the focus groups, teachers were heard to say that students had learned something. However, when asked how they knew students had learned, they said, "We hope they have".

### Money

The data suggest that money is also a driver as can be seen in this extract from an interview carried out in Cycle III / Phase IV, "I think the projects are a very important point, as it is European money (laugh) yes this is a very important point. Getting so much money for two years, you can buy perhaps something or pay for the journeys." It is unclear to what extent money was a driver and how the issue of money influenced either positively or negatively, the way in which ELvis operated.

#### **7.6.7 Summary of Section 7.6**

Section 7.6 has presented the data analysis in relation to the second research question, 'What factors are inhibiting and /or contributing towards any change?' using the themes that emerged out of the process of theoretical



memo-ing (see section 6.2) as a framework. This has led to a refinement of the thematic model of factors influencing readiness to engage in pedagogic shift in a virtual international school, which was presented in Chapter 6. This refined model is now discussed in the following section.

## 7.7 A Refined Thematic Model to Support Pedagogic Shift in a Virtual International School

Figure 7.3 presents a refined version of the thematic model to support pedagogic shift in a virtual international school, which emerged from Cycle II. As a result of Cycle III, the five initial themes now contain a variety of elements. Although separate elements within themes have been identified in this model, many of them overlap demonstrating a complexity of interwoven factors that contribute towards or inhibit change. These themes and elements are now presented in the following sub-sections.



Figure 7.3: A refined thematic model of factors influencing readiness to engage in pedagogic shift in a virtual international school

### 7.7.1 Leadership

The theme of Leadership in this research had four different foci, including, schools leadership, ELvis leadership, teacher leadership of projects (in ELvis) and to a small extent leadership from students (in ELvis). The relationship between these levels of leadership is unclear and requires further research. However, what is clear is that all the other themes and elements in the new thematic model of pedagogic shift, require effective leadership across these different levels, without which pedagogic shift will be slow and lack uniformity across the virtual international school. Any further research would need to explore what 'effective' means in this context.

This mirrors the findings from the literature review, which also points to the centrality of leadership. For example in the technology adoption models (see section 3.6), leadership appeared to be a significant factor in the successful implementation of technologies in teaching. Garrison *et al.*, (2004a) suggest a series of steps need to be followed in creating blended courses including clear direction from senior leadership. Vaughan *et al.*, (2006) found that the success of the blended community of inquiry model could be directly "attributed to the proactive leadership of senior administration in approving policy, setting direction, and providing support." (2006:69) Although the contexts of their studies were either face-to-face, or blended within one institution, leadership also emerged as a central factor in pedagogic shift in the context of a virtual international school, often influencing other themes or elements within themes.

Specifically the notion of effective leadership of schools involved in ELvis, was mentioned, with the data suggesting that 'buying into the concept' of the virtual international school is not enough to bring about change, rather it requires effective or pro-active leadership. Although discussed in the technology adoption models, the role that effective leadership has to play in enabling pedagogic shift as part of the successful running of a virtual international school is largely missing from the current literature on virtual schools. Where it is discussed, it is often in association with leadership of

learning, rather than appropriate leadership styles or other factors affecting pedagogic shift, with the exception of a key critical success factor in the *VISCED Project* (2013). This study noted that where virtual schools had been successful, “the capability of leaders to make decisions regarding staffing, student issues, and virtual school administration is fully developed at all levels of management” (2013b:86). However, the *VISCED Project* did not explore the application of leadership theories or styles beyond the acknowledgement of this critical success factor. In this research, the potential influence of different schools leadership styles was briefly mentioned in relation to the differences experienced between countries. However, further research is required to make sense of how these affect pedagogic shift within a virtual international school.

Although school leadership styles were not discussed beyond the superficial, (for example, delegation alone does not work) aspects of their leaders’ behaviours were mentioned in relation to the importance of incentivising staff to engage and participate in the virtual international school. The data suggest that incentivisation, either through the freeing up of time, financial recompense, public recognition for work undertaken or other types of rewards, increased staff motivation for experimenting with new pedagogical processes in the virtual international school.

The data also highlight that the changing priorities of the schools’ leaders might affect their ability to lead their staff as they engage in the virtual international school, but no conclusions can be drawn on how these affect pedagogic shift in the virtual international school without further research.

Personal qualities were mentioned regarding the leadership team of the virtual international school itself and common characteristics were seen as important, including being persistent, personable, open and frank, driven and having the ability to fill in gaps and to sort out a mess. There are also some tentative conclusions that can be drawn about teamwork. Although Berge *et al.*, (2009) suggest that teams are needed to establish curricula, consider content and develop timelines in the setting up of modules, they do not

explore how teams form or work collaboratively in a virtual international school context. Indeed there is little literature associated with virtual teams outside of the field of business management. In this research, the data suggested that development of the co-ordinator's team was an important factor in creating a sense of belonging, which in turn created motivation to experiment with new pedagogical approaches in the virtual international school. Moreover before this development took place, as identified in Cycle I, co-ordinators saw themselves as mainly part of their own schools, rather than as part of the virtual international school. Further research is needed into how identities change, whether multiple identities emerge and how a culture within the virtual international school develops.

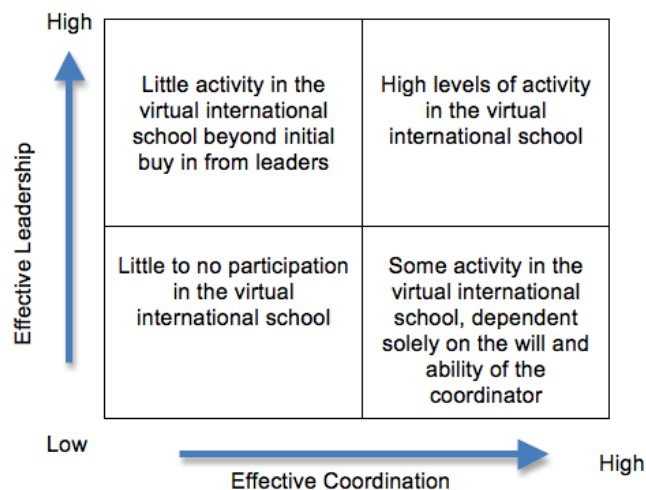


Figure 7.4: Relationship between leadership and project activity levels in the virtual international schools

There appears to be a relationship between the levels of activity in projects and the effectiveness of leadership. This relationship is presented in Figure 7.4. There is some suggestion from the data to show that where leadership from individual schools or the co-ordinators is not effective, teachers in the virtual international school are not able to successfully implement projects. Where the effectiveness of leadership increases, but there remains a lack of co-ordination, there might be some activity in projects, but it remains limited. Where the individual school leadership remains low but the level of effective co-ordination increases, project activity rises, but this tends to be associated

with co-ordinators leading projects themselves in their own schools, rather than their ability to engage other teachers. Where projects are most successful, there is effective leadership from both school leaders and the co-ordinators.

Although the virtual international school in this study aimed to involve students in the leadership of projects, this has only happened in a limited manner in isolated projects. Although tentative conclusions can be drawn about why this is, such as the need for greater 'scaffolding' of students, more research is needed to see how student leadership of learning can be made a reality in a virtual international school.

How teams are developed and the part that leadership has to play in this is unclear, but the data suggest that leadership is central in making virtual international schools a reality.

### **7.7.2 Understanding Perspectives**

Fullan (2000) suggests that, "people must behave their way into new ideas and skills, not just think their way into them" (2000:15). During Cycle I (Pilot Study) the teachers appeared to be on a journey towards behaving 'their way into new ideas and skills' and as this research has progressed over the course of three years, some staff had started experimenting and immersing themselves in new ideas associated with pedagogic shift. Evidence from the data however, suggest that this journey has not been the same for all staff, the reasons for which can in part be explained in the theme of Understanding Perspectives.

Within the theme of Understanding Perspectives eight different elements emerged over the course of the data collection and analysis, including personal motivations, external drivers, different cultures, personality types, conceptions of time, conceptions of pedagogy, values, attitudes and beliefs and school identities.

The data suggest that time needs to be given to explore perspectives of other teachers particularly in light of the complexity of virtual international schools which are made up of different schools from different countries. Where possible, the data also suggest that this exploration of perspectives should take place face-to-face, rather than online, especially with those teachers who are not confident with online collaboration. The focus of such exploration should be on preconceptions of pedagogy. Moreover teachers should make their students aware that other students from different countries may engage with learning in different ways to themselves. The notion of 'time' was seen as a key issue, inhibiting pedagogic shift for most who took part in this study. Even those who felt that other teachers used time as an excuse for non-engagement, did agree that there was often not enough time given to work in the virtual international school. However, the data also suggested that giving more time would not necessarily be enough to create space or the necessary conditions for pedagogic shift.

The findings from this research also suggest that teachers have different motivations, both intrinsic and extrinsic, which drive them to participate in a virtual international school. However the implications of these different motivations need further investigation to see how they impact on pedagogic shift or how motivations can be sustained over time.

Several external drivers supporting or inhibiting change were identified through the data analysis and further research is needed to see how school leadership marries the interests or external stakeholders with the aims and objectives of the virtual international school. In the case of this study, it was suggested that the way funding has been administered on a two yearly cycle has led to an outcome driven, rather than process driven system of education which has inhibited pedagogic shift.

Finally, the data suggested that different personality types were more likely to engage in pedagogic shift than others, which has implications for leaders who are selecting staff to represent their schools in a virtual international school,

particularly if those leaders wish to use these staff as catalyst for change in their own schools.

Cranton (2006) suggests that for transformative learning or change to take place, individuals and their communities of practice need to make sense of prior experiences through questioning the beliefs and assumptions held historically. In the virtual international school used in this study, some teachers were learning through an ongoing discussion on the development of new curriculum design, teaching strategies and technology integration, negotiating how these can be implemented in the variety of different cultural situations which make up the ELvis partnership. Each person appeared to have an equal voice in these discussions, coming from different cultural and educational contexts, underpinned by various pedagogical approaches as determined by national education systems.

However, those staff who did not appear to be changing were also those who did not appear to be engaged in the interrogation of their and others' values, beliefs, aspirations or perspectives. Such discussions are vital for change to take place and would need to be embedded into any group wishing to set up a virtual international school.

### **7.7.3 Building Community**

Laszlo *et al.*, (1997) suggest that in building communities, there needs to be an engagement with processes of divergence and convergence. They defined divergence as the “exploration of the different values, points of view, ideas, and experiences of the member of the group” (1997:10) and define convergence as the process of “co-creation of shared vision and values and agreement on next steps” (*ibid.*).

They add that engaging fully in convergence can be problematic as “divergence involve[s] chaos, uncertainty, and in some cases, even discord” (*ibid.*). The data suggest that in virtual international schools, the process of divergence needs to be made explicit as staff in the virtual international school

appeared to engage in vision building without first exploring the different values of individuals, and this may be a contributing factor delaying pedagogic shift.

There does however, appear to be some alignment of vision and values amongst some of the teachers in the research context, although the data suggest that this was because 'like-minded individuals' were drawn together because of an alignment of already established personal values and vision. In other words, the alignment was not due to any formal process taking place to explore vision, values and agreements on processes.

Some like-minded individuals appeared able to collaborate together effectively online to progress activities in the virtual international school. However, other teachers appeared to struggle with online collaboration, suggesting a need for a formal exploration of vision and values, as argued by change theorists such as Mezirow (2000) or Cranton (2006). Further research is required to explore how the sharing of vision and values can take place in a virtual international school context and how the creation of a shared vision and set of values impacts on the motivations of those who self-select to join in a virtual international school.

To some extent, it can be argued that the teachers in the virtual international school have become a community of practice (Wenger, 1999) as they have begun to learn from each other's practice within their common domain of teaching. However, the relationship between the teachers cannot be defined as 'newcomers' and 'old timers' according to the notion of 'legitimate peripheral participation' (Lave and Wenger, 1991), which underpins Wenger's model, as they were all new to the virtual international school context. The data suggest that there were no 'knowledgeable others' (Vygotsky, 1930/1978) from where experience or understanding could be drawn and this has also led to a delay in pedagogic shift taking place.

However, there did appear to be a difference between those staff who had



been involved in developing the vision and values and agreement on next steps from the beginning and those who had joined later on, in terms of their understanding on what had worked and what had not in the virtual international school. Some of the initial problems that staff had in the early stages of project set up in the virtual international school, such as creating logins for the students in the VLE, were experienced by staff joining later, which raised the question of induction processes. However, creating induction processes was problematic where there were no agreed processes related to curriculum design, teaching practices or technology integration. The area of staff induction in the context of a virtual international school requires further research.

#### **7.7.4 Facilitating Change**

In exploring pedagogic shift, this research could not clearly find any evidence of 'scaffolding' as teachers tried to integrate web based communication technologies into new pedagogical practices. Pass (2004) describes 'scaffolding' as the way a learner is brought through stages of development by a caring "social other", who has some expertise in the area of that development. However, as articulated in section 8.3.3, with the absence of 'knowledgeable others' (*ibid.*) or 'innovators' (Rogers, 2003), this can be problematic to achieve, therefore other interventions such as professional development should be engaged. The lack of 'knowledgeable others' (*ibid.*) or 'innovators' (*ibid.*), has implications on pedagogic shift in virtual international schools and further research is required to see how this issue can be overcome.

McKenzie (2001) suggests that preparing teachers to teach online requires substantial investment in professional development, which goes beyond the short workshops that are typical of in service training (INSET). This view is shared by others, such as Berge *et al.*, (2005) who suggest that for a collaborative virtual school to be successful there needs to be a good model of teacher development, which includes a "widely recognized online professional development system for its instructors" (2005:204). Likewise, in

the *VISCED Project* (2013), the final report states that teachers “need to know how to use the technology as a pedagogical tool” (2013a:110). Although during the Cycle III / Phase III data collection, nine of the seventeen respondents said that a reason for joining in ELvis was for the staff professional development opportunities, there had been no formal staff development. Of these respondents, five were head teachers, who were potentially in a position to make staff professional development a reality. Where there has been support in ELvis, it has tended to come from people outside of the virtual international school and the schools that make up ELvis.

This is a potential issue, as Black *et al.*, (1998) explain:

“Teachers will not take up attractive sounding ideas, albeit based on extensive research, if these are presented as general principles which leave entirely to them the task of translating them into everyday practice – their classroom lives are too busy and too fragile for this to be possible for all but an outstanding few. What they need is a variety of living examples of implementation, by teachers with whom they can identify and from whom they can both derive conviction and confidence that they can do better, and see concrete examples of what doing better means in practice”

Black *et al.*, (1998:10)

Thus, without the ‘knowledgeable others’ (*ibid.*) within the virtual international school, this process takes time as new teachers / early adopters present their successes to the other teachers in the virtual international school.

However, it was noted by the critical friend that there has been a major change, compared to the beginning of ELvis partly because of the interaction that takes place between the teachers and co-ordinators, mainly face-to-face, but also on Skype and in emails. He added that,

“I think we must emphasise how important it is for personal contact between these people because although it started out as something that could operate online it was hopefully going to be entirely online, that personal interaction has had a big impact on what they adopt and how they adopt it, because one person reassures the other that things will be okay if you try it.”

This was picked up by others who specifically noted how important the face-to-face meetings were and that often the important learning took place outside of the agenda items, reflecting in the bar in the evenings, or with colleagues on the plane home or through discussions in the coffee break. These face-to-face meetings have been very important for building personal relationships where people feel safe to talk. Including face-to-face meetings (and funding for them) in virtual international schools are therefore important in the context of pedagogic shift.

### **7.7.5 Harnessing Technology**

The data collected and analysed in this research have revealed two main reasons why many of the teachers are not integrating web based communication technologies into their teaching practices, (and why students are reluctant to use the VLE). Firstly this is related to a lack of familiarity and secondly to the issue of 'immediacy' or 'synchronicity' with technology.

The chosen VLEs however, have also been difficult to navigate, and lack of time spent on familiarization with the technology has compounded the problem of accessibility. There has also been a criticism from some teachers that the web based communication technologies lack 'immediacy' in that they are not accessible *via* handheld devices and notification systems have been poor. Moreover, students, who for some teachers have appeared 'technology experts', have demonstrated how they use technology for instant communication and entertainment. Indeed, the data suggest that the experience of students is related to push technologies with instant notifications, e.g. messaging and microblogging where there are minimal words counts and collaboration using deep exploration of ideas is not possible, as demonstrated in this quote,

“Our students are not used to err, to use the VLE for working in school. They use it just like all young students or young people all over Europe or all over the world use it, they have to look how the social contexts there, Facebook or something more ... and they learn in a certain way ... so they use it particularly in the lessons to research something, err, very short and just in a superficial way, and that's all.” (Pine)

However, the teachers have also struggled with this as well, as demonstrated by this quote,

“They [the students] should have collaborated online, but that was the most difficult part because really they didn't know how to do that. Maybe we didn't know either (laugh).” (Beech)

This demonstrates the lack of ability in collaborative working for both the teachers and the students. One may tentatively suggest, that any application for EU funding for projects, which are reliant on the understanding and application of web based communication technologies, should always be judged against the inclusion of a plan of professional development for staff. Where teachers have begun to change their use of web based communication technologies, it has been due to a 'change in attitude' characterised by one participant as an 'open-mindedness'. This open-mindedness has enabled a shift to take place.

### **7.8 Response to Independent Judgement**

One method for ensuring research quality is to engage an Independent Judge (section 4.4.2) to review the data collected, the analysis and interpretations to check that the interpretation is similar to that of the researcher. Therefore during this research, independent judgement was sought from a colleague who is familiar with grounded theory methodology. He was asked to review the data collection and analysis from Cycle III and reflect upon the findings presented in Chapters 7 and 8. The responses were fed back verbally in a one-to-one meeting. In summary, the Independent judge confirmed the findings and had nothing to add, challenge or take away in light of his own analysis.

### **7.9 Summary**

The purpose of this chapter was to present the data collection and analysis of Cycle III, in order to answer the two research questions, which were as follows:

In the context of a pan European virtual international school:

**RQ1.** Are curriculum design, teaching strategies and technology integration changing over time?

**RQ2.** What factors are inhibiting and/or contributing towards any change?

The data suggested that there had been some small changes in curriculum design, teaching strategies and technology integration, but that the process was complex due to a variety of inter-related factors, which were sometimes inhibiting, rather than contributing towards change.

The data collected and analysed throughout Cycle II, led to an initial thematic model of pedagogic shift in virtual international schools, (see Chapter 6). To explore this initial thematic model in more depth, the second purpose of the Cycle III data collection and analysis was to use the findings related to the research questions to uncover findings that further inform the emerging thematic model.

The new insights, (see section 7.6), have led to a deeper understanding of the factors that inhibit and contribute towards changes in curriculum design, teaching strategies and technology integration in the context of a virtual international school. These were then discussed in more detail in section 7.7 before the findings from the Independent Judge were articulated. Chapter 8 will draw together the research, present the limitations and suggest areas where further research is needed.

## **Chapter 8 - Final Reflections and Conclusions**

### **8.1 Introduction**

This final chapter draws the research to a conclusion by firstly articulating the limitations of the study, in particular drawing the reader's attention to possible weaknesses and acknowledging the boundaries and scope of the research. After this, the chapter summarises the key points, which have emerged from the literature, data and the emerging thematic model of pedagogic shift and in so doing, identifies areas for further research. A set of concluding remarks are then presented, before the final summary of the chapter is made.

### **8.2 Boundaries, Limitations and Relevance of the Study**

#### **8.2.1 Boundaries**

The purpose of this study was to examine and explain how pedagogic shift takes place in the context of a virtual international school. This statement encapsulates the parameters of the study. Virtual schools are a new and emerging phenomena (see section 3.5) and specifically virtual international schools are rare, with little research exploring their emergence. Whilst this therefore provides a rich ground in which to conduct research, it provides a limited field in which to apply the findings. The research is bounded within the context of the 'internationalness' of a specific virtual school and the extent to which the findings can be generalisable across the larger field of other virtual schools, is therefore limited.

Two other factors also define the boundaries to this study. Firstly, the study is time limited, taking place over four years from 2009 and 2013. It could be

argued in this era of rapid change, web based communication technologies and teachers' propensity to use them in their teaching and learning has also changed, which may limit the relevance of some of the findings. Secondly, the research was not meant to comprehensively cover every aspect of pedagogic shift. This was outside of the scope of this research. Rather the purpose was to carry out an exploration into the concept of pedagogic shift in a virtual international school using the specific context of a distributed partnership of seven schools called ELvis, located in five different EU countries, particularly exploring those barriers and enablers to changes in curriculum design, teaching strategies and technology integration.

### **8.2.2 Limitations**

The first limitation is associated with the reliance of self-reporting. In other words, data were collected directly from participants themselves through a combination of individual interviews, questionnaires and focus groups. Although this was a planned design decision aligned with the interpretive nature of this study, self-reporting relies on the perspectives, memories and individual biases of the subjects themselves, including their ability to articulate these, which in most instances may have been problematic as communication was carried out in a second language. In spite of various data collection techniques being employed over the course of four years, this still remains a limitation of the research and should therefore be considered when drawing conclusions from this study.

A second limitation of this study is that only teachers, including head teachers and co-ordinators were used in the data collection and analysis. The study did not at any point seek data from the large body of students that were also part of the virtual international school. Nor were external stakeholders consulted, such as parents or other staff from the representative schools who were not directly involved in the virtual international school itself. This was a deliberate decision as the focus was on the teachers and the development of their ability to change, but it is also recognised as a limitation in the sense that the sample is not a representative one of the whole of the schools involved. If these other

groups had been used, it is possible that different conclusions might have been made, related to the diverse populations and settings.

As discussed in Chapter 4, a researcher brings with them their own assumptions, prejudices and biases to the topic under investigation, however to the best of the researcher's ability, an attempt has been made to negate these through a process of credibility, transferability, dependability and confirmability. Highlighting this as a potential issue enables the reader to consider the researcher's position as a possible limitation when drawing their own conclusions.

### **8.2.3 Relevance**

In a shrinking more connected world, there is a growth in international virtual education partnerships, such as those evident in funding streams provided by Horizon 20:20, Erasmus+ and other EU member state initiatives. These international virtual education partnerships play an increasingly important role in educating younger generations. However, the process of change that teachers must go through to effectively collaborate, teach and enable learning in such partnerships is a complex process. This research has contributed to the discourse on what needs to be in place for international virtual education partnerships to be successful. From the research a thematic model has emerged to support teachers from different cultural and national contexts, as they learn to collaborate, teach and enable learning across national boundaries. Such a model is important in an increasingly multi-national teaching and learning context, where teachers need to be able to create a shared vision whilst transforming their teaching practice on and off line.

The thematic model presented and discussed in Chapter 7, can help teachers and teacher educators all over the world, understand the process of change they need to go through and the resources it will take, to embrace the full potential of web based communication technologies in their international online collaborations and contexts. As well as for teachers and head teachers, this research has particular relevance for local and national decision makers



and international partnership funders who promote the use of blended (face-to-face / online) or purely online programmes. The thematic model can be used as a guide by local, national and international funders, on how to evaluate the potential success of partnership bids.

### **8.3 Suggestions for Further Research**

The key findings from the Cycle III (Exploration of Key Themes) analysis has led to the identification of areas where further research into factors influencing readiness to engage in pedagogic shift in a virtual international school needs to be carried out. These areas for further research include the themes of Leadership, Understanding Perspectives, Building Community and Facilitating Change and are now presented in the following sections.

#### **8.3.1 The Theme of Leadership and its' Relationship with the Process of Change**

The virtual international school used in this study, had clear ambitions for student learning in an international setting. However, during the first two years of this research, the teachers involved found themselves unable for the most part, to adopt new pedagogic practices and so demonstrate the pedagogic shift necessary for students to learn and work with web based communication technologies. This was due to a complex mix of factors, most notably the lack of both effective leadership and pedagogical support in relation to framing evaluative and reflective discourse, including the negotiating of meanings and perspective sharing. This difficulty in implementing pedagogic shift with a group of educators in schools, if replicated elsewhere, needs to be addressed in order that teachers may successfully engage in change and prepare young people for a world where virtual and blended working and learning is fast evolving. In the context of this study, the school had a dispersed multi-level leadership model, which requires further research in itself, to understand how and if it can be used effectively in virtual international schools that experiment with new pedagogical techniques.

### **8.3.2 The Theme of Understanding Perspectives and its' Relationship to Learning Journeys**

Pedagogic shift (see section 1.2) can be seen as a change in teaching processes, which may or may not be transformational in nature. However, it is widely agreed (Mezirow, 2000; Cranton, 2006) that often such change is incremental and evolves over a long period of time. Such incremental change can be seen in the data analysed around the concept of technology integration. Indeed, this research has clearly shown that pedagogic shift takes 'time', being a necessary component in the construction of new frames of reference, which is supported by change theorists such as Mezirow (2009), Cranton (2006), or Dirkx (2000) (see section 3.4). Moreover, it was reflected by the participants as a process or journey, yet paradoxically the 'lack of time' was often cited as a barrier to participation or success of projects in ELvis.

In addition, the data also suggested that giving more time would not necessarily be enough to create space or the necessary conditions for pedagogic shift, possibly because teachers have different motivations, which impact on their different levels of participation in a virtual international school. Further investigation is needed to see how these different motivations impact on pedagogic shift and how motivations can be sustained over time.

### **8.3.3 The Theme of Building Community and its' Relationship to the Evolution of Virtual International Schools**

From the outset of this research, ELvis appeared often as a collection of projects and meetings rather than as one school. In support of this, the data clearly show that some teachers feel they are just running projects with teachers from other schools. However the data also demonstrated how a small group of teachers feel they are part of a new virtual international school, in one case, that ELvis was more of a school than her own school. This raises questions about the evolution of such virtual international schools and how a sense of community is built, such as when and as a result of what processes can it be said that the school exists as an entity? What characteristics define a

virtual international school and can such a school exist without a physical building or the structures and infrastructures of administrative processes, assessments and legalities?

Although some of these questions are discussed in relation to virtual schools, in the work of Russell (2006) and of Clarke *et al.*, (2005), these authors have not acknowledged the existence of virtual international schools which are made up of separate schools in different countries. Nor do they address the issue of building a community. Questions also arise concerning the relationship between the virtual international school and the individual schools. For example, Clark *et al.*, (2005) suggest that there is little research on how virtual schooling impacts on individual school improvement (see section 3.5.1). This research has not directly addressed the issue of individual school improvement, although it has uncovered that bringing head teachers together and getting them to agree on general principles for joining a virtual international school is not enough to make that virtual international school successful, in spite of the hard work of the co-ordinators.

The data analysed in this research also suggested that development of the co-ordinator's team was an important factor in creating a sense of belonging, which in turn enabled the virtual international school to evolve. However, further research is needed into how identities of staff change over time, whether multiple identities can emerge and co-exist as teachers find themselves located in more than one school and this relates to building a sense of community in the virtual international school. Aligned to this, is a question of how a culture within the virtual international school emerges and develops.

#### **8.3.4 The Theme of Facilitating Change and its' relationship to Theories of Learning and the Theme of Leadership**

Although there is much theory associated with aspects of pedagogic shift – such as that found in transformational change or technology integration models as detailed in Chapter 3 of this thesis, there appears to be a difficulty

in translating these into practice, especially in the absence of scaffolding through either 'change agents' (Rogers, 2003b), 'facilitators' (Jones and Younie, 2014) or 'knowledgeable others' (Vygotsky, 1930/1978). This supports Cranton's (2006) claim that there are few resources available to foster transformative learning. A next step for this research, would be to translate the thematic model of pedagogic shift into a road map and associated resources, to aid in the scaffolding of pedagogic shift in virtual international schools.

This research also highlights the limitations of existing learning theories in supporting the development of new practices. For example, theories associated with communities of practice (Lave and Wenger, 1991; Wenger, 1999) or communities of inquiry (Garrison *et al.*, 2000) as well as the Vygotskian (1930) model for learning, all require 'knowledgeable others' (*ibid.*) to lead either formally or informally, the learning process. In the context of this study, the dispersed multi-level leadership model did not appear to provide the necessary conditions for a 'knowledgeable other' (*ibid.*) to be utilized. It may be that had the leadership model been articulated more clearly, a sharper focus and vision of innovative pedagogic practice may have been developed and a programme of scaffolding with independent support from a 'knowledgeable other' (*ibid.*), employed.

In relation to this last point on 'knowledgeable others' (*ibid.*), this research also raises important questions about the capacity of teachers and head teachers who are willing to change and innovate in small isolated settings, yet lack the external support and access to knowledge sharing. The apparent isolation of the schools and the teachers from other similar initiatives, such as those who were documented in *The VISCED Report* (2013c) taking place around the world is a puzzle and possibly provides an example of what the Organisation for Economic Co-operation and Development (*OECD*) recognises as poor knowledge management in the education sector (Saussois, 2006).

### 8.3.5 Other Areas for Further Research

#### Student - Teacher Relationships and Roles and its' Relationship to Learning Design

The notion of student learning was largely missing from the data collected from the teachers (see section 7.5.1), rather the focus of their responses were associated with planning and carrying out projects. To some extent discussions about the design of projects was also largely missing from the data. There may be several reasons for this. Firstly, teachers seemed to lack a common language (from a theoretical perspective rather than mother tongue) to discuss pedagogy in terms of curriculum design, educative purpose and student learning. For example there were no common agreements on the definition of action inquiry. This lack of a common language may be due to the differences in national teacher education and professional development programmes. However it may also be due to the fast changing landscape of teaching and learning, specifically in relation to the emerging role of the teacher in light of new technologies. The developing focus on student ownership of learning afforded by those new technologies, particularly connective and networked technologies, are promoting student autonomy and developing students as “equal learning partners” (Fullan *et al.*, 2014:ii), which not only affects the relationship of teachers and students, but potentially changes the relationship amongst “teachers and within organisational systems” (*ibid.*).

It could be argued that ‘discourse and dialogue’ (Cranton, 2006), associated with such emergent concepts would be difficult enough amongst a group of expert educators. It is potentially very difficult without experienced scaffolding from a ‘knowledgeable other’ (Vygotsky, 1930/1978) within a group of mixed nationality teachers, who in the main lack technological competence or advanced language skills in English (the chosen *lingua franca* for ELvis and second language for most). However as evidenced in the data, the way in which students are engaging in projects has begun to change as discussed by one teacher who described how he used one set of students (the ELvis ambassadors) as guides or mentors for the other students (see section 7.3.2).

Further research is required on defining the roles of students who are termed 'ambassadors' in the context of virtual international schools, including further research on the nature of their pedagogical relationship with the teacher.

Hawkins *et al.*, (2010) suggested (see section 3.2.3), that student-teacher relationships are under-researched in relation to virtual international schooling and data analysed in this thesis, has begun to shed light on areas, which might prove fruitful for further investigation. Specifically, the data revealed changes in the locus of control from teacher to student. Although tentative conclusions can be drawn, such as the need for greater 'scaffolding' (Bruner, 1967) of students, more research is needed to see how student leadership of learning can be made a reality in a virtual international school. Further research is required to explore this in more depth.

The data has also revealed that the role of the teacher involves skills and knowledge not just associated with the subject specialism, but importantly with learning design and to some extent the facilitation of student learning journeys. This mirrors current discourse on emerging pedagogies, which suggests that teachers need to increasingly become experts in learning design if technology is to be utilized in the creation of deep learning experiences, (Fullan *et al.*, 2014). In relation to learning design (see section 7.5.1), the data analysis has led to some further questions, these being, should the purpose of technology use in teaching and learning be for 'immediacy' of learning? Can deep learning happen without time for immersion, reflection and internalization? Should teachers nurture different expectations in students? None of these were answered during this study. However, they are related to learning design and could be the focus of further research. Differences in relation to student-teacher relationships between countries also need to be explored in the context of virtual international schools, as well as problems in engaging students across such geographical boundaries.

### 8.3.6 A Summary of the Areas for Further Research

Table 8.1 summarizes the areas for further research into factors influencing readiness to engage in pedagogic shift in a virtual international school, as discussed in sections 8.3.1-8.3.5.

<b>Theme</b>	<b>Focus for Further Research</b>
Leadership	<ol style="list-style-type: none"> <li>1. The dispersed multi-level leadership model.</li> <li>2. Effective leadership to enable evaluative and reflective discourse, including the negotiating of meanings and perspective sharing.</li> </ol>
Understanding Perspectives	<ol style="list-style-type: none"> <li>1. Perceptions of time and the relationship between time and motivation.</li> </ol>
Building Community	<ol style="list-style-type: none"> <li>1. Building a sense of community.</li> <li>2. Characteristics and constituents of virtual international schools.</li> </ol>
Facilitating Change	<ol style="list-style-type: none"> <li>1. Translation and testing of the thematic model of pedagogic shift into a road map and associated resources, to aid in the scaffolding of pedagogic shift in virtual international schools.</li> <li>2. Investigation into how Facilitating Change is linked to the dispersed multi-level leadership model and access to external support and knowledge sharing.</li> </ol>
<b>Other Areas</b>	
Student - Teacher Relationships and Roles	<ol style="list-style-type: none"> <li>1. Defining the roles of students who are termed 'ambassadors' in the context of virtual international schools, including the nature of their pedagogical relationship with the teacher.</li> <li>2. Student leadership of learning.</li> <li>3. The changing role of the teacher in enabling deep learning.</li> </ol>

Table 8.1 A summary of areas for further research into factors influencing readiness to engage in pedagogic shift in a virtual international school

### 8.3.7 A Final Reflection on the Theme of Harnessing Technology

The theme of Harnessing Technology is not currently considered as an area for immediate further research. That is not to say that further research is not required regarding harnessing technology, rather the data analysis has suggested that the other themes of understanding perspectives, building community, facilitating change and particularly the theme of leadership, are more central to the thematic model, before harnessing technology can be considered. In other words, the thematic model can be viewed to some extent as a pre-adoption of technology model.

#### **8.4 Relating the Definition of Pedagogic Shift to the Thematic Model**

In the context of this research, pedagogic shift has been defined (see section 1.2.2) as a process where teachers engage with each other to change their current isolated teaching practices to teaching in collaboration with others through the integration of web based communication technologies into those new teaching practices. Teaching practices can be viewed as those strategies (the tasks) and learning designs (the logistics) that enable teachers to practice their craft of teaching. Implicit to this definition is the idea that teachers engage collaboratively in pedagogic shift to improve their teaching practices as individuals and as a group for the benefit of their students. However, throughout the course of this study, the data analysis has uncovered a complexity of inter-related factors: Leadership, Understanding Perspectives, Building Community, Facilitating Change, Harnessing Technology, which were sometimes inhibiting, rather than contributing towards a shift in pedagogies in the context of a virtual international school.

In particular the analysis led to the creation, development and refinement of an initial thematic model of factors influencing readiness to engage in pedagogic shift as developed in Chapters 6 and 7 and presented in final form here (see Figure 8.1).





Figure 8.1: A refined thematic model of factors influencing readiness to engage in pedagogic shift in a virtual international school

In spite of the limitations and boundaries of this research (see section 8.2) the thematic model proposed in Figure 8.1 would appear to provide a useful set of factors, which should be considered by those wishing to engage in pedagogic shift in the context of a virtual international school setting.

## 8.5 Final Conclusions and Next Steps

This thesis consists of eight chapters. Chapter 1 introduced the topic under investigation, whilst Chapter 2 described the initial cycle of pilot research, positioned early in the research process in line with a constructivist grounded theory approach. Based on these initial findings from the first cycle of research, Chapter 3 documented a focused literature review, presenting theoretical perspectives, which informed the conceptual framework of the thesis, identified the research gap and led to the refinement of two research questions. With these questions identified, the methodological process was articulated in Chapter 4 with Chapters 5, 6 and 7 presenting the main body of the research and culminating in a thematic model of factors influencing readiness to engage in pedagogic shift in a virtual international school.

Findings from this research, point to the importance of a learning journey, which necessarily takes time and is influenced by a variety of factors in which effective leadership plays a central role. The concept of a learning journey is also central to the initial definition of pedagogic shift (section 1.2.2). Additionally, the research shows that processes such as understanding perspectives, the way technologies are harnessed, transformational change is facilitated and a sense of community is built, all play an important role in enabling pedagogic shift to take place.

The thematic model derived from this research potentially has practical implications, aiding and informing the transformative process through the identification of potential barriers and enablers to pedagogic shift in the context of a virtual international school setting. It could also lead to the creation of resources to support transformative change and be translated into a road map to explain what needs to be in place before teachers from different cultural and national contexts can engage in a process of pedagogic shift both as individuals and as a group, using web based communication technologies as they learn to work collaboratively in a virtual international school setting.

Such a road map and resources are important in an increasingly multi-national teaching and learning context, where people have to learn to work across geographic boundaries, creating and sharing vision whilst transforming their practice on and offline.

This research also contributes to the development of the Blended Community of Inquiry (BCoI) model (Vaughan *et al.*, 2006). Unlike the original study that developed the BCoI model, which was located within one university context, this study has focused on teachers in a virtual international school, demonstrating the enablers and barriers they have encountered as they have attempted to shift their pedagogical approach. Unlike the BCoI model the data that has emerged from this research identify a necessary journey that takes time and includes critical factors that need to be addressed if teachers are to be successful in shifting their pedagogical approaches within an environment

of web based communication technologies. Specifically, this model suggests that structures and infrastructures need to be in place, before the BCoI model can be employed. This has practical relevance in the context of virtual international schools and in virtual collaborative groups that wish to engage in pedagogic shift.

## **8.6 Summary**

This chapter began with an acknowledgement of the limitations of this research, which have been delineated by the boundaries and scope of the study. It has then summarized the identified areas for further research to progress the field of knowledge with regards to pedagogic shift in virtual international school settings. The chapter concluded by presenting the final model, relating it to the definition of pedagogic shift and closed with the final conclusions and next steps.





## Appendices

### Appendix 1

Many of the ELvis schools are rural and some view themselves as 'disadvantaged'. Appendix 1 provides a description of the schools and a brief text on how they view themselves:

Schools in ELvis during Cycle I (Pilot Study) and Cycle II of this research (2009 – 2011)	
School	Description
Belgium	This is part of a group of schools, which receives extra support during the school year 2008-2009 because of the 'equal educational opportunities' decree. The school is situated in a semi-rural area.
England	This school in an advantaged area, which is of benefit to international projects as there is financial support. There are also a large number of gifted and talented students who are inspired by the curriculum development links given.
Germany H	This is situated in a rural area with industries and businesses of small and medium size. It is a very large general education secondary school in the state of Hesse in Germany. There are a small number of students with special educational needs. Some students have an immigrant background mainly from eastern Europe and Turkey – 90 nations altogether.
Germany NS	This is a school in the state of Niedersachsen in Germany. The school is part of a rural area in the far north of Germany and therefore in a disadvantaged area. There is only small industry and for the students it is very important to learn about European life in order to have a good perspective.
Germany NW	This is a school in the state of Nordrhein-Westfalen in Germany. It is located in a rural area with about 40 000 inhabitants. Our 1200 pupils come from several small towns and communities.
Italy	This is located in a historically disadvantaged area, in the far south of Italy, which is changing from an agriculture based economy into one based on tourism.
Netherlands	This is a school in a rural area in the Netherlands. The population is decreasing because of migration to the cities in the west.
Schools joining those above for Cycle III of this research (2011 – 2013)	
Norway	The school is situated in rural surroundings in Ås, a municipality with 14000 inhabitants some 30 km south of the capital Oslo.

## **Appendix 2**

### **Questionnaire for Autumn 2010**

#### Initial Fact Finding Questionnaire and Discussion Guide

1. What was successful about your project?
2. How do you know this?
3. Were there any barriers to student participation?
4. Were there any challenges you faced as teachers?
5. What did you learn about running a project in ELvis?
6. Did you teach in a different way in ELvis, than you do in class?
7. How? What was this like?
8. What would you do differently next time?

## **Appendix 3**

### **Co-ordinator Interviews Meeting Spring 2011**

1. What projects have you been involved in?
2. How successful have they been?
3. What issues / challenges have you faced
4. What do you think the children have learned?
5. What have you learned / experienced during this time?



## Appendix 4

### Project Focus Groups Spring 2011

<b>PROJECT GROUP:</b>	
SUCSESSES: What has worked well in ELvis?	CHALLENGES: What did you find difficult in ELvis and how did you overcome the difficulties?
STUDENT LEARNING: What do you think the students have learned from taking part?	ELvis IMPACT: What benefits have you noticed in your students, in other no ELvis lessons?

## Appendix 5

### Co-ordinator Questionnaire Meeting Spring 2011

<b>1. Our Goal:</b>
“is to collaborate more closely and do research together, adapting our teaching and learning to the 21 <sup>st</sup> century and to find a way of rewarding participants with a formal accreditation”
<b>How well have we done?</b>

<b>2. We also added, that:</b>
“Teacher professional development is considered key to implementing changes in pedagogy. Teachers will be encouraged to lead with action research. This will be supported with teacher exchanges and International Department Meetings enabling more and more teachers and students to get involved over time”
<b>How well have we done?</b>

Objectives of ELvis I	Have we met these in ELvis?		
	Yes	No	In Part
To improve the quality and to increase the volume of mobility involving pupils and educational staff in different Member States			
To improve the quality and to increase the volume of partnerships between schools in different Member States.			
To encourage the learning of modern foreign languages			
To support the development of innovative ICT-based content, services, pedagogies and practice in lifelong learning			
To support improvements in pedagogical approaches and school management			

**Do you have any thoughts / reflections about this?** (please continue overleaf)

Aims of ELvis I	Have we met these in ELvis?		
	Yes	No	In Part
To find a way to reach a deeper and more enduring collaboration between the partner schools			
To develop a change in approach to teaching and learning to one which is more appropriate to the 21 <sup>st</sup> century			
To reach this through Action Research and Inquiry Based Learning by teachers and students			
To encourage a more enterprising and creative approach to learning by teachers and students			
To exploit technology to eliminate or reduce barriers to learning and collaboration			
To create an international virtual learning environment to enable us to do all this. We said that this would be the 'binding factor' as students and teachers 'collaborate 'on-line'			
To find a way of getting the work that is done accredited in the schools and if possible by 'awarding bodies'			

**Do you have any thoughts / reflections about this?** (please continue overleaf)

## **Appendix 6**

### **Presentation of Less Frequent Codes Appearing in the Cycle II (Identification of Key Themes) Data**

#### **1. Assessment**

##### Cycle II / Phase II

Additional comments associated with 'student learning' were concerned with meta-learning, for example, "they are not just learning the skills they are learning how different people learn". Of the remaining codes that were generated, the distribution was as follows: 'collaborative learning' (n=5), 'quality of student work' (n=4), 'teachers assessment' (n=4), 'peer review' (n=4), 'non-assessment' (n=2), 'rewards' (n=1).

#### **2. Beliefs, Attitudes and Values**

##### Cycle II / Phase I

Additional comments were coded 'teacher perceptions' (n=4) or 'teacher motivations' (n=2).

##### Cycle II / Phase II

Six further comments were coded as 'teacher motivation', for example, "really hard to engage colleagues in other languages because of the language capacity of the non-language teachers" and five comments were coded as 'time'.

#### **3. Community**

##### Cycle II / Phase I

Additional comments were coded 'working with teachers' (n=1), 'working alone' (n=1) and 'co-operation' (n=1).

#### Cycle II / Phase II

The five comments coded as 'communication' were related to lack of practical organization, lack of interaction, muddled communications or lack of expertise. The remaining comments were coded 'working alone' (n=3), 'face-to-face teachers' (n=2), 'relationships' (n=2) and 'co-operation' (n=1).

### **4. Curriculum**

#### Cycle II / Phase I

The other six comments were coded as 'student interest' in the curriculum area.

#### Cycle II / Phase II

There were eleven further comments around 'curriculum fit', for example, "it is what they have to do so it is very integrated into their curriculum". There was one final comment associated with how 'funding' related to the curriculum.

### **5. Evaluation**

#### Cycle II / Phase II

The remaining six comments were coded as 'stages of development', (n=4) for example, "A start has been done" or 'suggested task' (n=2).

### **6. Inquiry Process**

#### Cycle II / Phase II

Two of the remaining comments were coded as 'distorting dilemmas' (n=2), for example, "It is terrible, all these discussion threads, you can't just keep up with them, it's impossible ... and then you just keep discussing it and not producing anything. It is only talking and talking and talking." This is also relevant to the category of 'technology'. One final comment was made, which was coded as 'experimentation'.

## **7. Leadership**

### Cycle II / Phase I

There were two further comments coded as 'management' and one comment each coded as 'project management', 'stakeholders' and 'decision making'.

### Cycle II / Phase II

There were seven comments coded as 'management', for example, "Skype is the best way of talking to other co-ordinators and managers – particularly if there is more than one in the call." (This was also coded in the Technology category). Of the remaining three comments, two were coded as 'stakeholders' and one was coded as 'decision making'.

## **8. Project Design**

### Cycle II / Phase I

The third highest code was 'student tasks' (n=12), for example, "We need to give students clear tasks and more responsibility." Of the remaining twenty-four comments, ten were coded as 'success of projects', nine were coded as 'involving teachers' and five were coded 'setting up projects'.

### Cycle II / Phase II

The fourth highest occurring code was 'using the VLE' (n=15), for example, "For me, ELvis works as a learning platform not as a communication platform there is too much going on to keep track of and I give up". There were three remaining codes included: 'involving teachers' (n=12), 'success of projects' (n=11) and 'tasks – general' (n=11).

## **9. Student Activity**

### Cycle II / Phase I

There were additional codes of 'self organisation' and 'student communications' containing five comments each. Of the remaining comments, four were coded as 'learning about technology use', three were coded as

'face-to-face students', two were coded as 'student collaboration' and one was coded as 'quality of student work'.

### Cycle II / Phase II

There were ten further comments coded as 'student collaboration', for example "More collaboration is needed" and nine comments coded as 'face-to-face students', for example "Students working together in face-to-face meetings was really powerful". There were six remaining codes: 'student communications' (n=6), 'learning about technology use' (n=5), 'quality of student work' (n=4), 'peer review' (n=4), 'self conscious' (n=3), 'numbers of students' (n=1).

## **10. Support Systems**

### Cycle II / Phase II

Of the remaining four comments, three were coded as 'scaffolding teachers' and one was coded as 'facilitation'.

## **11. Teaching Practices**

### Cycle II / Phase II

The second largest code was 'tasks - general' (n=11), for example, "what I did was put a number of questions that they have to answer, I told them what they would be assessed on". Of the remaining sixteen comments, seven were coded as 'working with teachers', three were coded as 'working alone' and one was coded 'scaffolding students'.

## **12. Technology**

### Cycle II / Phase I

Of the eleven remaining comments, four each were coded as 'learning about technology use' and 'access' and one each were coded as 'non/little use of VLE', 'ICT' and 'Facebook'.

## Cycle II / Phase II

A further twelve comments were coded as 'VLE issues' (n=6), for example "I think that technology has sometimes been a barrier" and 'non/little use of VLE', for example, "for me, the contact on the VLE, should have been more intensive". Of the remaining comments, five were coded 'learning about technology use', three comments each were coded as 'ICT', 'Facebook' and 'Skype and emails' and one comment was coded as 'access'.



## Appendix 7

### Questionnaire and Discussion Summer Meeting 2012

In the ELvis II bid, the rationale contained a number of objectives. How well have we done in meeting these objectives?

<b>a) Working with External Partners</b>
"In aiming to create learners for the 21st Century, we recognise the need to engage directly with the 'real world' in our activities. We aim to achieve this by working with external experts and organizations, for example Rotary International - for work experience and enterprise."
<b>Which external experts have we worked with? What did we do? If we haven't worked with external experts, what can we do to make sure this happens?</b>

<b>b) Research and Dissemination</b>
"Sarah Jones will evaluate and assess the results and impact giving us an objective view and another route for dissemination of what we learn. She will work with students and staff allowing us to draw on her considerable knowledge of inquiry based learning and action research and innovations in the use of emerging technologies giving us the academic support we felt we needed from the start."
<b>How well has she done?</b>

<b>c) Embedding New Practices</b>
"We are applying for a second term because we feel that the investment, both in European funding and in work by teachers and students, needs time to embed. In ELvis we are beginning to collaborate synchronously, creating, articulating, refining and publishing new knowledge irrespective of our geographical locations or cultural/language differences"
<b>What are you, or what have you seen, being embedded in practice? What barriers remain? How can these be overcome?</b>

**d) Teacher Training**

“Some of the schools are also involved in teacher training. We would like to include teacher trainees in the project as well, thus giving them a more international scope.”

**Has this happened? What have been the success? And the barriers?**

**e) VLE**

“We want to expand and perfect our present ELvis Virtual Learning Environment in the next few years, so that it will become a 'part of life' at the schools ... This project means that we can help each other explore this technology and more importantly inspire each other and colleagues in our schools to get the best out of it.”

**What are the successes associated with the VLE? What are the barriers?**

**f) Accreditation**

“We are still looking for a way to give formal accreditation to users (both students and teachers). We have had contact with the International Baccalaureate and awarding bodies in the UK.”

**At what level is accreditation given for student AND staff work in ELvis? What are the barriers to achieving more formal accreditation? How can they be overcome?**

**g) Devolved Responsibility**

“We have a philosophy of devolved responsibility. Colleagues from the partner schools look beyond their school at the bigger ELvis picture and are responsible for some part of it like Enterprise, Community Service & Work Experience as well as the projects proposed.”

**Does this happen? To what extent? What are the barriers?**

--

**h) Community Service**

“We strive to get students from all schools involved in community service or work experience in the communities served by the partner schools in order for more students to gain an 'international experience' they will not easily forget.”

**Does this happen? To what extent? What are the barriers?**

--

**i) Exchanges**

“We will also encourage more 'normal exchanges' especially activities for staff, like job shadowing, international department meetings and other, more social activities in order to create bonds that endure.”

**How much does this happen? What are the successes? What are the challenges/barriers?**

--

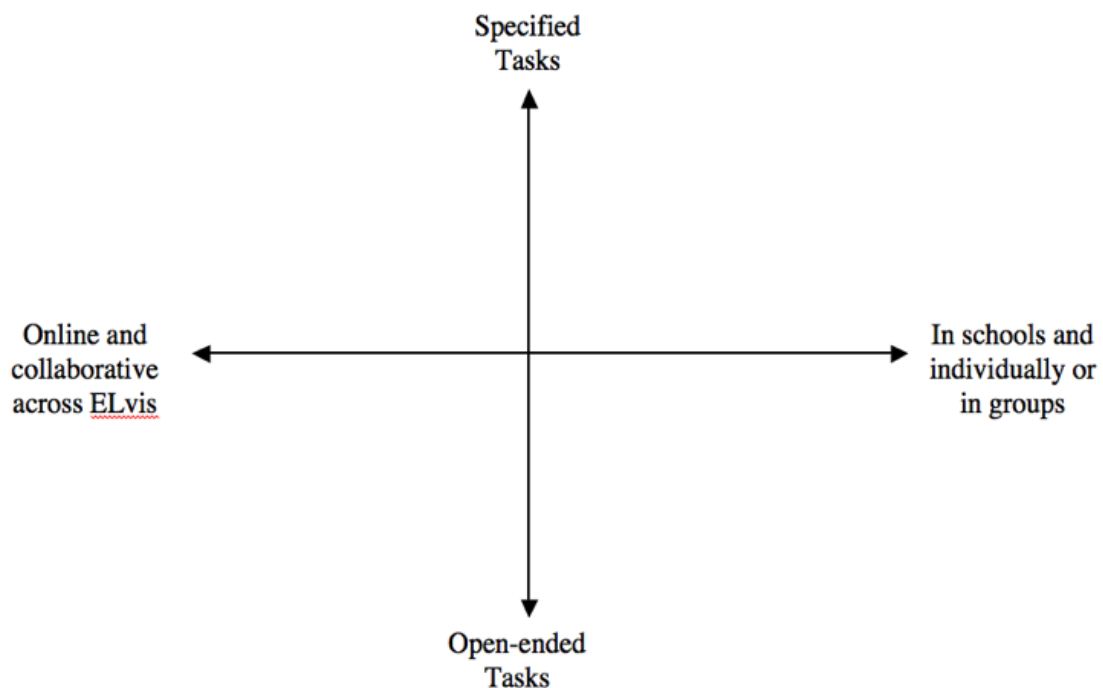
Other key points raised and not covered in the rationale	Have we met these in ELvis?		
	Yes	No	In Part
Develop better ways of collaborating on-line between the schools			
Staff and students to achieve an inquiry based approach to education			
Develop techniques to manage remote online groups			
We expect students, trainees and staff to gain research competencies when they work on the ELvis VLE			
We expect students to attain lifelong learning skills that are not easily gained in their own school experiences			
We expect that their modern foreign language skills will improve much more than would otherwise be the case			
The ELvis Dream School			
Encourage more active involvement of Management, thus stimulating staff			
Stimulating managers to look at the way schools are managed in partner schools			
Increase the number of students involved			
<b>Do you have any thoughts / reflections about this?</b>			

Any other comments?

## Appendix 8

### History Project Evaluation Autumn 2012

1. SUCCESSES: What has worked well in the History Project?
2. CHALLENGES: What did you find difficult in the History Project and how did you overcome the difficulties?
3. STUDENT LEARNING: What do you think the students have learned from taking part?
4. VLE: How was this used during the History Project?
5. Please map the History Project on to this grid following Sarah's explanation



## **Appendix 9**

### **Questionnaire and Discussion Autumn 2012**

1. Why do you want to be part of ELvis?
2. Why does your school want to be part of ELvis?
3. How is ELvis currently different to ordinary school?

## **Appendix 10**

### **Co-ordinator Interviews Summer 2013 – Prompt Sheet**

#### **1. ELvis Journey**

1.1 Can you see a difference to where ELvis was at the start, to where ELvis is now and to where you want ELvis to go in the future? If there is difference, can you describe it?

1.2 What has enabled that change?

1.3 Do you think you have changed in any way as a result of taking part in ELvis?

1.4 Where are you personally on that journey, how do you know?

#### **2. Change**

2.1 In ELvis, do you think teachers should work with students from other schools, or should each teacher just work with their own students within a group ELvis project?

2.2 Has this happened? Why / why not? What would help you to change?

2.3 Have you been supported in any change?

2.4 What has prevented change from taking place?

2.5 Do you think innovative / new pedagogical approaches have been used in ELvis? What do they look like? How were they developed?

2.6 Who would you say have been the key people who have embraced these new pedagogical approaches? How do you know? (Do these people share their knowledge? How? How do other teachers react to these people?)

2.7 Do you think teachers reflect in ELvis? How do you know? What kind of reflection? Can you describe it?

2.8 What do you understand Action Inquiry to be? Can it serve any purpose in ELvis?

2.9 Some teachers said they don't want to do action inquiry. Do you know why that might be?

### **3. Community**

3.1 Do you think there is an ELvis identity?

3.2 How would you describe it?

3.3 How do you think it evolved?

3.4 How well do you think the co-ordinators work together in ELvis? (f2f / online, how do you problem-identify/solve, negotiate meanings, share purpose?)

3.5 Have you ever felt 'isolated' or 'on your own'? Can you describe what happened and why this was?

### **4. Leadership**

4.1 Do you think it has worked? Why / Why not? (Overall and project by project)

4.2 How have you been supported by your leadership team, in school? Why / why not?

4.3 How has Leadership (or the lack of it) from individual schools impacted on how ELvis has developed?

### **5. Perspectives**

5.1 Do you think time has been given to explore people's different perspectives and assumptions? (How do teachers and co-ordinators talk about issues and support each other?)

5.2 How would you describe the pedagogical approach used in your school? Is this similar to what you do in ELvis?

5.3 What motivates you to be part of ELvis? Do you think this is the same for everyone?

5.4 How big an issue is time? (usually a metaphor for 'I do not feel like doing that' so it is the spirit that is lacking in my view.)

5.5 Do you think cultural differences create a barrier to developing ELvis? How?

5.6 What does a successful ELvis project look like for you. What sorts of things have been successful?



## **6. Technology**

6.1 What are the key issues regarding technology for you? For ELvis?

6.2 Do you want to use technology in projects and in ELvis organisation?  
What kinds of technology and why?

## Appendix 11

### Cycle III / Phase III Data Analysis



## Appendix 12

### Conference Papers Related To This Thesis

Jones, S. & Sanguedolce, P. (2013). Developing High Order Thinking Skills Through Digital Media. *Association for Information Technology in Teacher Education (ITTE) Annual Conference 2013*, United Kingdom

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