An Investigation to Determine
the use of
Online Video Clips
as a Teaching Resource
in a
Second Level School

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Declaration

I herby declare that this project is entirely my own work, and that it has not been submitted for any other academic award, or part thereof, at this or any other educational establishment.

Signed ____________________________

Date ____________________________
Abstract

An Investigation to Determine the use of Online Video Clips as a Teaching Resource in a Second Level School

Video sharing websites such as YouTube have great educational potential. Video technology, perhaps more than any other medium has the power to engage, captivate and enlighten the student. The purpose of this study is to investigate the use of video clips as an educational resource in order to gain an understanding of how this new technology has impacted on the classroom.

A case study research model was used to research the question and a single school group comprising of forty teachers participated in the study. Within the case study a series of in-dept interviews were conducted with teaching staff, a focus group comprising of a subject group of teachers was assembled and a questionnaire was distributed and undertaken by the entire teaching staff.

A review of current literature indicates that the use of video clips add significantly to the educational experience gained through it use. Research addresses the importance of teacher in-service that focuses on integrating technological skills with sound educational pedagogies that cater for the needs and requirement of the learner. The issue of how we learn is researched in addition to an account of the principle learning theories associated with computer based learning.

The research findings indicate that the school under review is very well equipped with up-to-date computer resources and as such is well placed to take make optimum use of video clip technology. However, the research indicates that only a small percentage of the teachers in the school use video clips as part of their lessons for a variety of reasons.

Regardless of participant’s use of video clips there was general agreement among those questioned to the potential offered through the use of video clip technology for educational development within their chosen field of expertise.
Dedication

This thesis is dedicated to the memory of my parents

James Cash
and
Margaret McLoughlin
Acknowledgement

I wish to express my gratitude to the following people who assisted me during the course of this study:

To Noeleen Leahy, who acted as my tutor and supervisor, for her help, encouragement, guidance and compassion throughout the period of this study.

To my teaching colleagues for taking part in the study and for making themselves available at all times during the study.

To the Principal and Board of Management of my school for granting me permission to carry out the research study within the school.

Finally, I offer a very special thanks to my children Sean, Laura and Michael and especially my wife Moira for their support, encouragement, patience and understanding over the past two years.
List of Abbreviations

BECTA  British Educational Communications and Technology Association
DES    Department of Education and Science
ICT    Information and Communication Technology
NCTE   National Centre for Technology in Education (Ireland)
NDP    National Development Plan (Ireland)
OECD   Organisation for Economic Co-operation and Development
SLSS   Second Level Support Service
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CHAPTER 1  INTRODUCTION

1.1 Background

The ubiquity of multimedia resources available on the Internet is rivalled only by the exponential growth in information technology. Research has shown that multimedia plays an important part in education. Nielsen (1995, p.125) states that multimedia systems enable non-linear access to vast amounts of information.

The delivery of digital video into today's classroom has been limited by a number of factors. In recent times the issue of web filtering in schools has restricted the use of video content that is available through video portal websites such as YouTube. Since its inception in 2005, YouTube has captured the imagination and attention of the general population to such a degree that 100 million videos are viewed each day. However, should a teacher wish to present a video clip to supplement their lesson they are restricted from doing so, due mainly to filtering restrictions that have been placed upon the network system.

Technical issues such as file format, media player codec and editing capabilities have restricted the use of digital video for educational purposes. Educators need to review their existing teaching strategies to take into account this emerging technology with a view to establishing how best to incorporate it into their teaching practices.

Web sites such as YouTube place new demands upon our teaching style in term of potential content and teacher support. Duffey argues:

“if we agree that there are changes occurring across the learning ecology and, that new conceptualizations are required to use these emerging technologies, then some care should be taken to think deeply about the impacts of new media on the processes and practices of pedagogy and our student context”.

1
Considerable research has been undertaken into the effectiveness of multi-media in education. Reid et al (2002) asserts that there is evidence that digital video dramatically broadens access to the traditional curriculum, and so to achievement in a wider context. Teachers involved in the pilot study felt that digital video exploits and supports a wider variety of learning styles than other modes of learning.

Other researchers have found that the use of multimedia enables the user to explore information in great depth and on demand (Barrett 1988, Collier 1987)

*In the course of 20 years, a dramatic rift has opened between the process of teaching and learning in the schools and the ways of obtaining knowledge in society at large, a rift made obvious by the fact that the process of teaching has not changed substantially, even in the past 100 years*

(Seingold et al. 1990)

As an educator, in reading the above passage one can easily identify with the sentiment that lies behind the statement. Our educational institutions have not kept pace with developments in technology but what is even more amazing is that this passage was written almost twenty years ago.

We live in a world of constant change, a world where new technologies are emerging on a daily basis. In order to be used effectively, new educational technologies need to be supported by innovative pedagogical approaches which in turn will provide an educational environment that complements the life that exists outside of the classroom.

1.2 Setting

Research for this thesis was undertaken in a second level school located in County Kildare. Built in the early eighties the school has a student population of five hundred and teaching
staff of forty-five. Between the years 2007 and 2009 the principal invited staff members to express an interest in having a resource package comprising of computer, digital projector, screen and internet connection professionally installed in their classrooms.

Working within the constraints of the available school budget, a total of twenty four rooms were equipped and commissioned with this teaching resource. During the course of this year the author was approached by the principal to present a series of school based in-service tutorials to staff as a means to maximising the use of the tools provided in each of the classrooms. As a direct consequence of this initiative a number of issues were identified. Some of these issues related directly to the level of computer competency of the staff, while other issues related to technical aspects associated with the use of the available technology.

1.3 Background to the study

Studies have shown that the use of digital video in the classroom enhances the learning experience. In evaluating Becta’s Pilot Report on Digital Video Reid states “Evidence from the pilot shows that the integration of digital video into teaching and learning has the potential to enhance learning across the curriculum. (Reid.M et al. 2002)

Within the Irish context the Department of Education and Science acknowledge the important role that multi-media and technology have to play.

Technological skills are increasingly important for advancement in education, work and leisure. The curriculum integrates ICT into the teaching and learning process and provides children with opportunities to use modern technology to enhance their learning in all subjects.

(DES 1999, P.29)

At present there is a considerable repository of video-based content available on the web that has the potential to enhance the learning experience of students. The unrivalled progression of the online video domain needs to be harnessed and utilised in the classroom
as an educational resource. In order to maximise the potential of this medium, practicing teachers must be equipped with the necessary skills in order to take full advantage of the available resources.

“Teachers will require knowledge of and training in, the language of the moving image before DV can be integrated fully into the curriculum”

(Reid.M et al. 2002, P4.)

There is little point in providing computer based resources within our educational network if the end user is not in a position to exploit the tools to their best advantage.

1.4 Rationale and Significance

The purpose of the study is to investigate the use of using online video clips in the classroom and the underlying principles and challenges associated with its use. Once complete the findings and conclusions should provide an insight into teacher’s practices and concerns with respect to the use of digital video clips in their classrooms.

Through the use of a focused tutorial and personal intervention the author will strive to improve the knowledge base of teachers by outlining an approach for developing an effective pedagogical methodology for the use of digital video.

The authors personal interest lies in researching and developing a teaching resource that can be used by teachers who wish to use online video clips in a more efficient and creative manner.

1.5 Research question

To investigate the use of digital video clips in a second level school.

In order to fully investigate the issue under review a number of questions need to be answered:

a) Does the use of digital video as a teaching resource enhance the learning process.
b) What level of use exists at present with respect to online video clips in the classroom.

c) What issues, if any inhibit the use of online video clips in schools.

d) What technical factors are associated with the use of online video clips.

e) What level of training have teachers received that directly relates to the use of video clips.

f) Is a focused tutorial and effective means of instructing teachers in the use of online digital video clips.

1.6 Educational policy impacting and informing the study

The school's broadband programme was established to provide a service which includes a number of integrated services such as broadband connection, content filtering, web hosting and security services to participating schools. The service is managed by the National Centre for Technology in Education (N.C.T.E) which acts as a central contact point for all I.C.T services and queries.

Of particular interest to this study is the area relating to web content filtering which is operated by the FortiGuard Web Filtering Service from Fortinet. Fortinet categorises all web-based content into one of 76 categories, access to any website is conditional on that category being available in the school.

To date some 30 million websites have been categorised. Schools can make an application to have a website re-categorised and a response is usually received within 24 hours. Video portal websites such as YouTube have been categorised and the content deemed unsuitable for access on the school network.

1.7 Research Approach

This study involves conducting a literature review of multimedia learning, exploring how students learn from exposure to digital video. A review of the technical issues associated with the use of video will culminate with the design and production of the tutorial plan.

The study will examine and focus on the existing use of digital video in the classroom and will establish what issues, if any, serve to inhibit its use.
Once this review has been completed, a study will be carried out in the researcher's own school. Since the researcher is using the study to evaluate the use of online video in their own school, a case study will be the main research method used.

A group comprising of forty teachers will form the basis for the study. This group will first undergo a questionnaire to establish their existing knowledge base and understanding of the issues under review. A group tutorial supplemented by written instruction will then be delivered which will outline the stages involved in using online video in the classroom. Following this a series of individual interviews will be conducted and a focus group established and interviewed.

1.8 Scope and Limitations of the Research

The research study is limited to a second level school in County Kildare. All data derived from the study will be sourced from within this school. The participants in the study are all practicing teachers who have expressed a desire to broaden their understanding and application of digital video technology by means of a poll conducted by the staff advisory committee. The school in question is particularly well furnished in that 24 of its 36 classrooms have a digital projector, screen and computer with internet access.

The purpose of a case study is to “study and observe the characteristics of an individual unit, a child, a class, a school or community…. with a view to analysing intently the life cycle of the unit” (Cohen et al. 2005)

Any subsequent findings relate only to the study in question and no generalisation can be made. However, the finding can provide an insight into other similar situations and cases. (Cohen et al. 2005)

The study does have a number of limitations. The sample of forty teachers is quiet small but the sample does provide an accurate cross section of teaching disciples that exists across the Irish Educational network.
The study is confined to a particular concept and as such it is not possible to extrapolate on the wider issue of computer aided instruction. The study will be undertaken over a relatively short period of time and as such can only include a small number of participant interviews and a small focus group.

The author has designed the video based tutorial that will be used in the study which will be distributed freely to participants at the time of the study.

1.9 Overview of Thesis

Chapter 2 will contain a review of literature that highlights a number of established learning theories that examine the issue of how we learn through the use computer aided technology. The review will then focus on the technical issues associated with the use of digital video and will provide an insight to any obstacles or restrictions that might inhibit its use.

Chapter 3 will outline the research methodology and the research paradigm to be employed in the study in addition to the research questions and research tools and instruments to be used to study the issue.

Chapter 4 will outline the findings of the study and will be presented in both textual and graphical forms. The use of cross referencing will be used as a means to test relationships and degree of consensus that might exist across the range of responses delivered through the questionnaire.

Chapter 5 will discuss the study findings in light of the literature review undertaken in Chapter 2.

Chapter 6 will present the conclusion emanating from the study as a whole in addition to any other relevant issues that may have arisen in the course of the research study.
CHAPTER 2 LITERATURE REVIEW

2.1 Introduction

Every preparation that a teacher undertakes in terms of planning, teaching and interaction is centred on the premise that students learn in a particular way. As a direct consequence teachers plan and design their lessons to take cognisance of this.

In order for teachers to effectively integrate technology into their teaching practice educators must first have an understanding of the various pedagogies associated with learning. Pedagogy is defined by Mortimore (1999) as “Any conscious activity by one person designed to enhance learning in another”

Pritchard (2007) stresses the important role of the teacher in the process and states “Executing a pedagogical approach depends to a large extent on the judgement of the professional teacher and the practical skills that the teacher has learned and practised”

The arrival of the computer into the classroom in the early 1980s had little impact on the way teaching was structured. Teachers simply merged this new technology with existing drill and practice routines that they had successfully employed over the years. There may well be a case for such a technique in education, but it does not concentrate or focus on the intrinsic value and potential that this new technology had to offer.

There is a need to examine our teaching methodologies in light of new technologies,

“There has been a paradigm shift in terms of teachers’ roles. As facilitators of learning, they are no longer the authority, or the most knowledgeable of the knowledge they teach. Learners in the information age no longer take whatever it is from the facilitator”.
According to a study conducted by Moreno and Valdez (2005) multimedia environments have the potential of promoting meaningful learning. They address the major cognitive processes that lead to meaningful learning, this includes selecting relevant information, organizing that information into coherent representations, and integrating these representations with existing knowledge. In this way using multimedia resources were employed to reinforce the interactivity between the learner and content helps to advance cognitive organisation during the learning process.

Belanger and Jordan (2000) support Moreno’s belief and state that using high levels of interactive material combined with video, sound, animation and high-resolution graphics can provide learners with a rich learning environment that can engage their psychomotor, cognitive and affective skills. By means of a growing awareness of the theories associated with learning and a growing interest in what new technologies have to offer, there is considerable scope to examine the possibilities afforded by Information and Communication Technology.

Wild and Quinn (1998) argue that advances in technology offer new opportunities for learning, and stress the importance of using a range of theoretical perspectives to optimize the use of new technologies in teaching and learning.

2.2 How we learn

There are many different theories of how people learn and in particular how such learning theories relate to use of Information Technology in education.

2.2.1 A Behaviourist Approach

“The behaviourist school sees the mind as a black box, in the sense that a response to a stimulus can be observed quantitatively, thereby
ignoring the effect of thought process occurring in the mind. The school, therefore, looks at overt behaviours that can be observed and measured as indicators of learning”.

(Good and Brophy 1990)

The behaviourist views learning as a process through which learners become able to make a specific response to a particular stimuli. This may appear as a very simplistic view but behaviourists hold the view that all behaviours can be quantified into a set of actions, which can be mastered through a process of training and rewards, often without any significance being placed on the idea of understanding.

Being in a position to respond with a correct answer to a question is not without merit, but it does not take cognisance of the degree of understanding of the respondent. Understanding must be a cornerstone of effective and lasting learning. There are situations however where the behaviourist approach is beneficial, areas where flexibility of the learning matter is not a requirement such as in learning multiplication tables and grammar rules.

The behaviourist approach subscribes to the view that strategies that held good in the past will hold good for the future. Atkins (1993) notes that behaviourist characterise with respect of the following:

- Subject matter: where material is dissected into a series of instructions and defined by such concepts as rules, principles and formula.
- Sequence and learner control: designers write a sequence of pre-specified form of instructions which are sequenced for an increasing difficulty and complexity. The speed of progression is usually beyond the control of the user who may be offered the opportunity to repeat questions in order to increase learning efficiency.
- Learning: The required operation, procedure or skill is demonstrated and broken down into smaller parts before the user is invited to copy the demonstration. Learners build proficiency from frequent reviews with check
tests at strategic points. Designers emphasise low error rate and the use of a loop back system is used should be used as performance warrant it.

Atkins (1993) concluded that a structured, deductive approach to the design multimedia applications can lead to rapid acquisition of basic concepts, skills, and factual information within a clear framework. The effectiveness of behavioural design approaches for higher-order learning tasks or for transfer of learning is yet unproven.

2.2.2 A Constructive Approach

“Cognitive theorists recognise that much learning involves associations established through contiguity and repetition. They also acknowledge the importance of reinforcement, although they stress its role in providing feedback about the correctness of responses over its role as a motivator”.

(Good and Brophy 1990)

Constructivism places understanding at a high level in terms of importance and views learning as a building activity through which the learner constructs an understanding of events, concepts and processes based on their own interpretation of events. In many cases the learner supported during the process by another person.

Constructivist theory supports the view that we construct new understanding upon existing understanding. In this way the learning process simply adds knowledge to what already exists or is known. This concept is often referred to as the schema theory whereby mental notes of real-world experience help us understand what we hear, see and experience. Johnson-Laird (1983) hold the view that human beings understand the world by constructing models of it in their minds.

Piaget first suggested the notion of schema in the early 1920’s, since then many psychologists have examined and developed the notion of schema:

“It is now plausible to suppose that mental models play a central and unifying role in representing objects, states of affairs, sequences of
*events, the way the world is, and the social and psychological actions of daily life*.

(Johnson-Laird 1983)

A schema can be described as a multidimensional repository for countless items of knowledge. It is a network of interconnecting nodes, each in its own a unit of information comprising sound, imagery, a smell or an action or more. The construction and layout of the schema is totally unique to the person and accounts from people having different perspectives on an understanding or principal.

Studies have shown that people learn better from words and pictures are from words alone. Fletcher and Tobias (2005) conclude that the multimedia principle, which suggests that learning and understanding are enhanced by adding pictures to text rather than presenting text alone, appears to be well supported by findings from empirical research.

2.2.3 A Cognitive View

Mayer’s multimedia learning theory was based on a review of 24 research studies on multimedia learning. Mayer (1997) developed a theory drawn from the dual coding theory, cognitive load theory and the constructivists learning theory. Mayer states that the learner possesses visual and auditory and verbal information processing channels, and identifies three critical stages in the learning process.

Mayer (1997) refers to the first cognitive process as the “selecting” process, whereby incoming verbal and visual information serves as signals that enable the learner to identify relevant information.

The second cognitive process is the “organisation” stage where the learner uses both the verbal and visual information to help organise and build cause and effects relations between the verbal and visual pieces of information.

The final cognitive process is “integrating” from where the learner builds connections between corresponding parts in the visual and the verbal representations.
Mayer’s theory of multimedia learning is based on three core assumptions:

1. Dual channel assumption: Humans possess separate information processing channels for learning experiences. This information is processed through separate information processing channels.

2. Each processing channel is limited in its ability to process information at any one time. This assumption is often referred to as the cognitive load theory.

3. Processing information in these channels is a cognitive process designed to construct coherent mental representations.

Fig 2.1 Meyers Cognitive Model of Multimedia Learning 1999

Mayer began with a theory of how people learn from multimedia instruction and from this work he developed five principles for the design of multimedia learning.

1. *Multimedia presentation principle*: It is better to use two modes of representation rather than one. The multimedia effect is consistent with the cognitive of multimedia learning in that the learner builds two different mental representations, a verbal model and a visual model and then proceeds to form connections between them.

2. *Contiguity principal*: Students learn more efficiently if they do not have to hold the entire animation in working memory until the narration is completed. When corresponding words and pictures displayed they should be presented at the same time rather than separate in time. This is relevant to the cognitive theory in that words and imagery must be in the
working memory at the same time in order to construct referral links between them.

3. *The split-attention principal:* It is of more benefit to present words as auditory narration rather than on screen text. With the cognitive theory of multimedia learning on screen text and animation can overload the information processing system whereas narration is processed in the verbal processing system and narration is processed in the visual information processing system.

4. *The individual differences principle:* A person’s individual differences will have an effect on multimedia principles, contiguity principles and split-attention. Learners who lack prior knowledge appear to benefit most from the above. Students who lack prior knowledge tended to show stronger multimedia effects and contiguity effects than students who possessed higher levels of prior knowledge. (Mayer & Galleni 1991) According to the cognitive theory of multimedia those students with higher spatial abilities are more capable of holding visual imagery in their memory and are more likely to benefit from contiguous presentation of words and pictures.

5. *Coherence differences principal:* Students learn better if they do not have to process extraneous words and sounds in verbal working memory or extra pictures in visual working memory. The theory advances the use of a coherent summary which reflects on key words and pictures rather than a longer summary. This is consistent with the cognitive theory of multimedia learning whereby the use of shorter presentations primes the learner to select relevant information which can then be organised more productively.

Crosby and Stelovsky (1995) argue that there is a clearer sense from the literature that cognitive style has an influence on the effectiveness of multimedia. In multimedia environments those with good spatial tendencies tend to do better than
those with low spatial tendencies. This is supported by Gardner (1983) theory of multiple intelligence which suggests that the learner has different ways of knowing other than the traditional linguistic form of learning. Through utilising multimedia, alternative learning styles can be identified and developed that can engage the learner to a greater extent by providing multiple perspectives based on the content. Pavio (1986) concludes that some forms of knowledge can be reconstructed easier if images are used. The medium of video is suited for viewing complex scenarios where there is interactivity between the partners or the environment. The processing requirements due to the video place a lesser demand on the visual and auditory senses.

The cognitive theory has a great deal to offer in terms of understanding how we learn and in providing an insight into the production of more effective educational resources. However, it does not provide an understanding of the more ambitious goal of how to reach a greater number of students with a variety of intellectual strengths and styles.

2.2.4 A Connectivism Approach

“Many important questions are raised when established learning theories are seen through technology. The natural attempt of theorists is to continue to revise and evolve theories as conditions change. At some point, however, the underlying conditions have altered so significantly, that further modification is no longer sensible”.

(Siemens 2004)

Most learning theories hold the view that learning occurs inside a person. None of theories outlined here acknowledge that learning can be acquired outside the person, such as learning stored electronically and manipulated by technology. Siemens (2004) states that “learning theories are concerned with the actual process of learning and not with the value of what has been learned. In a network world, the very manner of information that we require is worth exploring”
With traditional instructional design models, the content is controlled and filtered in advance of the learning process. As a consequence of this the designer dictates the knowledge that is being presented and does not take into account the needs of the user of how they might want to apply the knowledge. With the connectivism theory the knowledge is filtered by the network itself. The required information is selected analysed and authenticated during the processing stage on which the learner has complete control having full autonomy and complete exposure to content.

The diminishing life of knowledge will provide the greatest challenge to learning. Today, knowledge has a diminishing half-life; that is the time that is required until half the knowledge acquired is obsolete. Technology-enhanced learning will require substantial re-invention and re-engineering of the education sector in order to meet this challenge. The University of California at Berkley reported a 75% increase in information over a two year period. With information, the basis of knowledge changes so also does the concept of knowledge change.

2.3 Technology and the teacher

2.3.1 Invoking Learning Theory

Learning how to effectively integrate computers into our educational practices involves more than just the fitting out of a room with the latest in computer technology. It requires a pedagogic understanding of what computer assisted learning is trying to achieve. Southerland et al.(2004) argue that there is a tendency to hold the view that since computers are so “new” that their utilisation will be accompanied by “new” pedagogies that will in some way transform teaching and learning.

Marshall (1997) views the absence of a coherent structure for computer assisted instruction as significant, as a consequence many teachers begin to assume that the use of a computer in their classroom will enhance the learning experience.

Teachers must analysis their own teaching styles with a view to establishing a relationship between technology and how computer aided instruction contributes to
the learning experience. Philips (1997) argues that the effective application of computer aided learning is as dependent on the pedagogical knowledge associated with computer assisted learning as the teacher’s proficiency with the technology.

2.3.2 Integrating Technology with Educational Pedagogy

As new advanced technologies arrive into our classrooms, there is increased focus on the role of the teachers knowledge bases required for successful technology integration.

Yonnies (2001) states teachers must reassess their own teaching strategies and review their existing teaching methodologies if technology is to be integrated seamlessly with education. The utilisation of technology must be guided by pedagogical research and requires more than simply setting up a classroom with computers or following trends set by software developers.

McKenzie (2003) supports Yonnie’s position and argues that a lack of focus with respect to the pedagogical issues provides and explanation as to why new technologies have failed to realise their full potential in many classrooms. McKenzie holds the view that technology in-service is based on showing teachers how to use computer applications as opposed to showing them how these tools can best impact on their subject area.

Conversely, Mehlinger and Powers (2002) argue that focusing solely on pedagogical issues without teaching foundational technical knowledge and skills may lead to difficulties in designing and delivering technology integrated instruction.

It is also important to realise that knowing how to use technology for personal use is different from knowing how to use technology for instructional purposes. Keating and Evans (2001) report that although student teachers had high confidence with technology for personal use, it did not necessarily mean that they were capable of using technology as a teacher.

Ultimately the successful integration of technology into education depends on the individual. According to Pierson (2001), technology integration practices are related
to individual teachers’ levels of teaching expertise, their definition of technology integration, and pedagogical expertise.

Developing theory for educational technology framework is difficult since it requires a detailed understanding of the complex relationships that are contextually bound. Historically, teachers’ knowledge bases have focused on two forms of knowledge: content knowledge (what to teach) and pedagogical knowledge (how to teach). (Hyo-Jeong and Bosung 2009)

Pedagogical Content Knowledge (PCK) has been developed by Lee Shulman and studies the relationship that exists between content knowledge and pedagogical knowledge.

2.3.3 Pedagogical Content Knowledge (PCK)

Shulman (1986) advanced the thinking about teacher knowledge by introducing the concept of pedagogical content knowledge. Shulman argues that teacher subject knowledge and pedagogy were being treated as mutually exclusive concepts in research and so proposes an approach that focuses on necessary relationship between the two by introducing the notion of Pedagogical Content Knowledge PCK.

![Pedagogical Content Knowledge](image)

Figure 2.2
Shulman(1986) argues that historically, the knowledge bases of teacher education have centred on the content knowledge of the teacher. Recently a shift in thinking has occurred as researchers took into consideration the holistic context of the teacher-learner symbiosis.

Ball and McDiarmid (1990) state that teacher education has shifted its focus primarily to pedagogy, emphasizing general pedagogical classroom practices independent of subject matter and often at the detriment of content knowledge”

Shulman advocates that content needed to be placed in relation to learners. Teachers needed to understand how to transform their content into techniques and practices that would make the subject comprehensible to others. Teachers need to take positive steps to know and understand the background knowledge of their students.

Over the years Shulman’s initial views on the relationship between content and pedagogy has evolved to recognise the role that new technology has played in the equation. Technology needs to be viewed as constituting of a separate set of knowledge and skills that has to be learned and dovetailed with both content and pedagogy.

This concept is known as Technological Pedagogical Content Knowledge (TPCK) and is seen by researchers such as Koehler and Mishra (2005) as providing an argument that pedagogically sound applications of technology require teachers to integrate their knowledge on content, pedagogy, and technology, rather than thinking of them as separate domains of knowledge.

Dede (2008) supports the work of Koehler and Misha by making a point that no application of technology to learning and teaching is universally good. Instead the best approach is to analyse the nature of the curriculum, students, and teachers in order to select the appropriate tools, applications, media and environments (Dede 2008).
“Quality teaching requires developing a nuanced understanding of the complex relationships between technology, content, and pedagogy, and using this understanding to develop appropriate, context-specific strategies and representations.”

(Koehler and Mishra 2005)

Productive technology integration in teaching needs to consider all three issues not in isolation, but rather within the complex relationships in the system defined by the three key elements.

Figure 2.3

Within the Irish Educational framework the NCTE(2001) in its review of IT2000 have given due consideration to the matter and have identified three areas that dictated a schools use of Information Technology.

- The availability of Information Technology equipment
- Teacher skill base with respect to Information Technology
- Existence of a schools Information Technology Strategy

Theses guidelines recognise the importance of a knowledge skill base and a need for a pedagogical strategy to be in place.
According to Pierson (2001), technology integration practices are related to individual teachers’ levels of teaching expertise, their definition of technology integration, and pedagogical expertise. Furthermore, Keating and Evans (2001) reported that although student teachers had high confidence with technology for personal use, it did not necessarily follow that they were capable of using technology as a teacher.

2.4 Educational value of online Digital Video

2.4.1 YouTube

YouTube was founded in 2005 by Chad Hurley and two fellow workers from PayPal. Within one year users were uploading 65,000 video clips per day. In November 2006 the Web giant Google purchased YouTube for $1.65 billion. Today YouTube attracts over 72 million monthly visitors and upwards of 100 million videos being viewed per day.(Hunt 2007, Lenhart and Madden 2007)

A report by the Pew Internet and American Life Project states that 57% of all internet users, regardless of age, have watched and shared online video from a variety of sites including YouTube.(Lenhart and Madden 2007)

Within its terms of use, YouTube provides a set of detailed instructions that clearly outline what is deemed to be acceptable content. Any infringement of these regulations results with the content being removed. User accounts are free but maybe terminated at any time if copyright or obscene material is posted.

2.4.2 Educational value of YouTube

Video is an instructional medium that can generate a verity of learning experiences. Through the use of video, educators can present content to students who are both auditory and visual learners.

Marshall (2002) argues that traditional teaching methods, including lecture and textbook approaches, may only appeal to learners who lean through a linguistic
approach. However, teaching methods that include the use of video and audio will, in effect, "reach more students and provide more opportunities for neural development and learning." (Marshall)

The 2008 Horizon Report lists grassroots video, recorded by everyday users, as an emerging technology that shows promise of widespread adaptation among education institutions in the future. Video sharing technologies originally created for entertainment and amateur purposes, are quickly gaining popularity in academic areas.

*Rather than investing in expensive infrastructure, universities are beginning to turn to services like YouTube and iTunes U to host their video content for them. As a result, students—whether on campus or across the globe have access to an unprecedented and growing range of educational video content from small segments on specific topics to full lectures, all available online*

(Consortium and Initiative 2008)

At the University of Minnesota two professors created a three-dimensional animation vidcast explaining a mathematical concept that attracted more than 1 million views. Online portals such as YouTube provide an opportunity for instructors to expand their audiences with the prospect of embracing an international presence. The advantages to the student are numerous; they range from exposure to real-life situations, scholarly content and demonstrations in the form of video clips all from within the faculty.

Just like any other form of educational technology, the instructional video is largely dependent upon how it's used. Karppinen (2005) argues that online video and digital video can be integrated to promote meaningful learning, which was described as:

a) active

b) constructors and individual
c) collaborative and conversational


d) contextual

e) guided

f) emotionally involving and motivating.

One or more of these six characteristics may be found in meaningful video enhanced learning situation.

Clearly there is great potential for the use of video as a teaching tool within education. Herschel and Jones (2005) are in support of this statement and add “Of all the technologies used in knowledge management, video holds the most promise for enabling the efficient transformation of tacit knowledge to explicit knowledge via externalization”.

Burke et al.(2009) outlines the results of a study carried out by The Intranet Journal of Allied Health Sciences and Practice undertaken in a university in South-eastern United States. The study found that half of the respondents reported using YouTube both in their class courses and their online courses. The most common uses of YouTube in their courses were in class discussions and debates and to provide informational material. The report found that:

- A wealth of video materials is available.
- It provides a means of providing information to students and one they could relate to.
- It offers real-life examples and visual demonstrations of the topics and concepts covered in class.
- Quick, short videos can provide an excellent resource as lecturers promote and discuss critical thinking.

On the negative side it was found that:

- A moderate amount of time can be consumed in locating suitable video.
• The credibility and value of the YouTube videos may be difficult to ascertain.

• Instructors and students may face problems in connecting to the YouTube website.

2.4.3 Limitations and challenges in using YouTube

As an educational tool YouTube offers many worthwhile features, however, this technology is not without limitations and challenges. The accuracy and the credibility of the content posted is not moderated in anyway, instructors need to exercise discrimination regarding the selection of topics. Instructor and the institution are advised to add a disclaimer to the link advising the user that the material is sourced from YouTube does not reflect the opinion or viewpoint of the instructor or institution.

YouTube allows users to copy and paste the URL of the video into their own presentation, this process is called embedding. At present the embedding operation is not supported by any of the Microsoft Corporation software packages. Users who embed a YouTube video into their own presentation such as a resource website run the risk of losing the content should YouTube decide to move or restrict the service.

Recently, new alternatives to YouTube have emerged; one such alternative is TeacherTube which is a free online platform for posting and viewing educational instructional videos. Educators can use TeacherTube to access more appropriate content that does not require searching through amateur content with little or no education value. TeacherTube videos are specifically designed for classroom use and is categorised by subject area and interest. In an effort to monitor the content available any person wishing to upload or post a video on TeacherTube must first register as an educational account holder.

2.4.4 New Concepts

Digital natives and digital immigrants are terms coined by the American futurist Marc Prensky to distinguish between those who have grown up with technology and those who have adapted to it.
Lorencova (2008) makes reference to the term “power browsing” which has been identified as a new research technique. A study undertaken at University College London CIBER Group 2008, found that a new form of reading which involves the horizontal scanning of papers, abstracts, and content pages has emerged. This research tactic has come to be known as “squirrel behaviour” and is used to download selected content, especially if it's free for later use. The research reveals no indication as to whether this material is thoroughly read or read at all afterwards.

Due to the creation of online information many researchers now hold view that the Internet has had a damaging effect on our intelligence. In his book Bauerlein (2008) offers support for his disquieting conclusion that “young Americans are arriving at college with diminished verbal skills, an impaired work ethic, an inability to concentrate, and a lack of knowledge even as more and more money is spent on education”

According to the Bauerlein, Nielsen found that only one in six read Web pages sentence by sentence, and many e-mail messages, newsletters and news feeds have only the first two words read in its headlines. Furthermore, PDF files, according to Nielsen, are mostly read when only printed, and any 'book-like" formats on the web turns the readers off (Bauerlein, 2008)

Education has always been about absorbing the facts first and reflecting on them on their fact with a view to attaching some meaning or purpose. Technology can assist the learner in acquisition of facts in a far more efficient manner than was possible in the past but it cannot teach a student how to reflect upon and evaluate the information they are gathering online.

2.5 Technical aspects associated with using on-line digital video

2.5.1 Introduction

Since the development on cinematography by the Lumiere brothers and Thomas Edison in 1890 society has been captivated by what it has to offer, becoming part of our general culture and entertainment. In December 1990, Timothy John Berners-
Lee, an English computer scientist is credited with being the first person to successfully communicate between two computers.

Today, the different forms of media are converging, there is a blurring of the edges between the traditional divide of communications which has brought meaning to a new term “convergence”.

2.5.2 What is Streaming

The term streaming media refers to the delivery of media between the source and the player in the real-time. Streaming media is taken to mean digitally encoded files delivered over the World Wide Web to PCs. The process of delivery is continuous with normal intermediate storage of the media clip which is stored for delivery on demand. Streaming begins with a request being made to a server, a progressive download of the file commences with can be played in real-time. The downloaded file is not stored on the computer in a lasting way; because of this it is not possible to access the file after the initial viewing unless you start the streaming again.

2.5.3 Video digitisation terms

Video is an especially complex media format requiring synchronisation of a series of still images with a soundtrack. A number of different file formats can be used. Uncompressed file formats are large in that all of the original data is retained but these results with extremely large files which are totally unsuitable for transmission on the intranet. Compressed formats compressed data initially within each individual frame but then subsequent compress previous frames based on the similarities between each frame resulting in extremely small file sizes.

Codec is short for compression / decompression and is a technology used for compressing and decompressing data, they exist to change long bits series into shorter bit series and then back again into something that closely resembles the original. The design and application of codec technology is considered to be an art form in itself and beyond the scope of this review.

Some popular codec’s include:
AVI: Audio Video Interleave, a storage format that specifies how video and audio are put together within the file. AVI can use a number of different codecs, including MPEG are easy and maybe compressed or uncompressed.

DV: A format originally developed by Sony producing high quality video resulting in large file sizes unsuitable for storage or transmission over the web.

MPEG: The Motion Picture Experts Group has developed several codecs which can be saved in MPEG format such as;

- MPEG-1: The first of several compression algorithms created by the Motion Pictures Experts Group, designed for CD storage and medium-bandwidth applications.
- MPEG-2: Not a replacement for MPEG-1, but an additional compression algorithm, designed for high-bandwidth and broadband applications, including digital television broadcast, HDTV, and DVD storage. Currently, this is the compressed format that provides the highest quality, and the one used for storage by some large archival institutions.
- MPEG-4: A standard designed for handling several different streams of media information while supporting user interaction. It also includes a new compression algorithm that provides DVD-quality video for low-bandwidth applications, such as quick downloading and streaming from the Internet.
- Quicktime (QT): An API (Application Programming Interface) from Apple that plays video and proprietary format (.mov).
- Windows Media: An API (Application Programming Interface) from Microsoft that plays video and proprietary format (wmv).
- FLV: Flash Video Player is a format specialty designed for the web, and offers high rates of compression with very high quality video. The format is played by means of a browser plug-in that is available in 98% of internet browsers. It is the preferred method playing of streaming video as it negates the need for the user to download a particular type of media player.
In recent years FLV has emerged as the most popular streaming format used on YouTube and for a variety of reasons:

- FLV file sizes are small compared to others (almost 60% less). Thus they take up less space on a server.
- FLV file plays directly in more browsers than Windows Media, Real Player or QuickTime.
- FLV players can be completely customized for logos, brandings and embedded links matching your website or product.
- Flash Communications servers are easier to maintain than others, and are less prone to security threats.

2.5.4 YouTube and FLV

YouTube, by default doesn't allow users to save or download videos that are hosted on its site. It only allows user to send a hyperlink to the friends and invite them to go to the YouTube website to view videos. In order to use a video at a later stage, the user must first download the video. This can be accomplished using a number of options:

- Web based options that do not require software to be downloaded. You simply copy the URL of the video into a web based application; the video is then downloaded onto computer.
- Desktop applications require the user to download a particular piece of software into which the URL is pasted. The desktop applications are usually faster than the web based options.
- Browser Plug-ins are applications that work in conjunction with you browser. The plug-in detects the presence of a video being viewed and will save the video while the user continues to browse.

All of the above options provide an effective means of downloading a YouTube video. The problem for many however, begins once the video has been downloaded. As many users have found out, flv videos downloaded from the internet cannot always be successfully played. This is often due to the lack of appropriate flv codec which decodes the data in to something that you can watch in a media player.
Anyone interested in playing a downloaded clip at a later stage must do one of the following:

- Download a flv codec player such as VideoLan free VLC player.
- Convert the flv file into a format that will play on a media player that is already installed on the computer.

There are a number of free flv players available but the one offered by VideoLan VLC Media is by far the most popular player available. All flv players available will replay the video without any loss of quality. This means that a video can be downloaded at home and played back in the classroom on the player.

2.5.5 Using FLV in the Classroom

If the intention is to simply replay the video in the classroom then the FLV player appears to be the best option. However, there are times when the teacher will find themselves in a position where you want to edit a particular section of the video. At present it is not possible to edit an FLV file on commercially available software program. In order to edit the video on the freely available Windows media player FLV file will have to be converted. Should this be the case, two options exist:

- The file is downloaded from the YouTube using a method of choice which is then converted using software that is installed on the computer. The software can convert the file into a number of different formats depending on the user’s intentions for subsequent use.
- Web based file converters where the YouTube URL is pasted into a web application. The file is then converted and made available for downloading to the client computer. The difficulty with this type of arrangement lies in the time taken to make the conversion. Application such the as freely available Zamzar will email the uses once the conversion has been completed.
2.5.6 *YouTube and filtering policies*

Within the Irish Educational system a filtering policy operated by NCTE, is in operation to block unsuitable material.

*YouTube has been placed in a category that is deemed unsuitable for school use. As a direct consequence of this filtering policy teachers cannot access any YouTube videos from within the school network. Since this is a policy decision teachers simply have the work within the constraints of the system. The only viable option for a teacher who wishes to use YouTube videos as a teaching resource is to download them outside of the network. Issues such as the availability of storage and network access will have a bearing on how teachers manage the resources harvested.*

Once downloaded the teacher if faced with the problem of how and where to save the video clip. Should they be in procession of a laptop computer then they can store the file on the hard drive for use in school. This arrangement is acceptable for a small number of clips but it is not a viable option for storing an increasing archive on a permanent basis as the drive space available will quickly reduce. The possibility of sharing a video clip resource with a colleague is further diminished since the clip is stored on the individual personal computer.
CHAPTER 3  METHODOLOGY

3.1  Rationale for this research

Through reflection and dialogue the following educational values have been formulated by this researcher.

- That the use of video in the classroom can enhance the learning experience for students.
- The value of collaborative learning and cooperation.
- The educational value that can come from the proficient use of video as a teaching resource.
- Teacher as a facilitator.

The author has witnessed the arrival and introduction of educational video content into the classroom and has embraced this technology through a self taught learning exercise. The author has come to realise the potential of this technology and now wish’s to assist others in making optimum use of this medium.

3.1.2  Research Question

The purpose of this study to investigate the use of video clips as a teaching tool in a second level school.

After due consideration to the research question stated above the following objectives was identified:

- To investigate the level of use of video clips as a teaching resource within one second level school.
• To define a strategy for the efficient capture of online video and its subsequent use in class lessons.
• To encourage the use of video as a teaching resource within a school by means of a targeted tutorial based lesson
• To encourage personal development as a ‘reflective practitioner’ by adopting the role of teacher-facilitator

3.2 Overview of Research

Over the past few years teachers have been presented with opportunities to engage in educational research and in reviewing existing research material within their areas of expertise. The research question under review here will require a detailed analysis of the relationship and attitudes that exists between teacher and technology, as well as the teachers their own perception of this relationship.

The use of the term research may initially appear daunting for those embarking on their first research project until they realise they are already engaged in gathering and analysing information on a daily basis. Typically, people gathered data by observing situations or events; they may read or surf the web or through listening to radio and television. Within their day to day classroom interactions teachers have learned to develop strategies for asking questions differently depending upon the particular circumstance and their knowledge of the pupils in their care. Clearly then, different methods of gathering information are appropriate to different students and situations.

Today, a vast range of information is made available to teachers from a wide variety of sources. Information such as departmental documents, education reports, syllabus reviews are targeted towards teachers covering all aspects of education. As a direct consequence to this exposure, teachers are used to evaluating and then using, storing or disregarding the information presented to them.

McNamera (2002) concludes that academic or formal research has come to be seen as something that others (usually very learned or how expertly trained) do and as having little practical application in the class-room.
However, studies have found that teachers are well aware of the value of quality educational research. A study undertaken by McNamara found that fifty percent of teachers claimed that teacher effectiveness and teacher knowledge was enhanced through educational research. The study also found that the vast majority of participants felt that the quality of teaching would improve considerably if teachers knew more about using research. (McNamara 2002)

### 3.2.1 The value of Educational Research

If educational research is to be effective then it must meet the requirements of the end users in the classroom. Educational research has been criticised for its failure to serve the needs of those in education. Hargreave’s highlights as what he sees as the failure of academic educational research to serve the needs of those in education and suggests that current educational research was poor value for money and that it inadequately served the teaching profession. (Hardgreaves 1966)

### 3.2.2 Formal Research

What does the term research mean when used in the context of education?

Anderson defines research in education as a disciplined attempt to address or solve problems through the collection and analysis of primary data for the purpose of description, explanation, generalisation and prediction. (Anderson and Arsenault 1998)

Anderson's definition underpins the notion that the research is purposive in that it strives to produce something as a possible solution to a problem. Burton and Bartlett (2005) hold the view that academic research essentially refines the information-gathering practices of daily living. Watching other people becomes observation, asking questions becomes interviewing. If the questions are written down they are called questionnaires. The difference is that these information gathering practices are carried out in a more conscious manner.
Howard and Sharp (1996, p.7) define research as seeking through methodical processes to add to one’s own body of knowledge and hopefully to that of others ….’

3.2.3 Types of Research

Verma and Mallick (1999) developed a typology of research which highlights critical differences between research that is oriented to the development of theory and of that which is designed to deal with practical problems.

- **Pure or basic research.** Concerned with the development of theory and discovery of fundamental facts to extend the boundaries of knowledge.
- **Applied or field research.** The application of new knowledge to everyday problems. Though more practical it usually employs the same rigorous methodology as pure research.
- **Action research.** Research into specific practical situations carried out by practitioners to solve clearly identified problems in order to bring about improvements. As such it is continuous and cyclical.
- **Evaluation research.** This is carried out to assess the effectiveness of specific projects to see if the original aims have been achieved. Many government-funded projects allocate a proportion of their budgets for evaluation.

(Verma and Mallick 1999)

3.2.4 Research Paradigm

A research paradigm is a term used to describe different models of research. Within a paradigm there is a general consensus on the research methods that are deemed appropriate for gathering data. A research paradigm essentially conditions the pattern of thinking and underpins the researcher’s actions.

3.2.5 Positivist Paradigm

The positivist’s paradigm was developed in the 19th century and is concerned with exploring social reality through observation and reasoning as a means of understanding human behaviour. Cohen makes reference to a framework of principal
and assumptions of science such as determinism, empiricism, parsimony and generality. (Cohen et al. 2005)

With this paradigm research is often carried out on two identical groups, a control group in which nothing is done and an experimental group where conditions can be altered in a controlled manner. In this way any differences between the groups can be attributed to a change in conditions. Experiments undertaken using this paradigm are seen as being objective, producing findings that are unaffected by the researchers.

Positivist researchers prefer structured methods of data collection which can be carried out on a large scale. Burton and Bartlett (2005) state that the data favoured is quantitative, usually presented as statistical tables, enabling others to see how the data has been interpreted and allowing for more accurate comparisons. The aim is to be able to generalize from the findings.

Critics of the positivistic paradigm point to the lack of regard for the subjective states of individuals in that it regards human behaviour as passive and under the control of external environments and factors.

Ions (1977) is one such critic, while acknowledging the merits of positivism, he voices his concern with the dehumanising effects of the social sciences to quantification and computation. Ion states that:

*The argument begins when we quantify the process and interpret the human act. In this respect, behavioural science represents a form of collectivism which runs parallel to other developments this century. However high-minded the intention, the result is depersonalization, the effects of which can be felt at the level of the individual human being, not simply at the level of culture.*

(Ions 1977)
3.2.6 Anti-positivism

Anti-positivism evolved in the 19th century. Exponents of this paradigm hold a view that social positivism and social naturalism advance the argument that the world of nature was different than the world of society as human society has unique aspects such as symbols rules and norms that can be collectively described as culture.

Anti-positivism emphasises the principal that social reality must be viewed and interpreted by the individual themselves, according to their own ideological state and understanding. As a consequence, knowledge must be personally experienced rather than acquired from external sources.

Cohen et al. (2005) states that reality is a multilayered complex, having a single phenomenon with multiple interpretations. The verification of phenomena is adapted when a degree of understanding is such that a concern develops within the individual to explore the phenomena in greater depth and detail in order to increase one's understanding.

Anti-positivism identifies three schools of thought within social science research:

- Phenomenology
- Ethnomethodology
- Symbolic interactionism

Phenomenology presents a viewpoint from where the individual’s behaviour is determined by the experience gained by direct interaction with the phenomena. It disregards any form of objective external reality.

Ethnomethodology was developed by Harlod Garfinkel and deals with the world of everyday life and centres around the process by which common sense and reality is constructed in everyday life. It examines such concepts such as interpretation and certain “take for granted rules” within the social setting.

Symbolic interactionism emphasises the understanding and interpretation of interactions that take place between humans. Within society, it is people’s immediate use of language which helps to give meaning to objects. Symbolic interactionists, therefore, claim that it is only by focusing attention on the individual's capacity to
create symbolic meaning from objects that will can study how change comes about in society.

3.2.7 Critical Theory

The main protagonist of this theory was Jurgen Habermans who developed an approach of investigation and action within the social sciences. Critical theorists reject the basic postulates of positivism: an objective external reality; the subject or object, distinction and value-free social science.

The approach sets out to describe the influences of historical forces that place restrictions upon human freedom and expose the ideological justification behind such forces. It sets out to explore factors that control the physical environment which generated empirical and analytical knowledge. Critical theorists advocate two kinds of research methodologies, ideological critique and action research undertaking research work.

3.2.8 Type of research to be employed in the study

In order to extract the optimum value from the data returned there is a need to identify the most suitable means for collecting data. In order to obtain a clear understanding of the issues relating to the use of online video clips in the school it will be necessary to employ a range of research tools in order to provide triangulation and increase reliability.

The use of a case study approach allows the researcher to “concentrate of a specific instance or situation” (Bell 1993, p.8) A case study research is employed when a holistic, in-depth investigation is required (Feagin et al. 1991)

It is described as a specific instance that is designed to illustrate a general principle (Cohen et al. 2005) In the case of this research project the specific instance is the school under review.

3.3 Characteristics of a Case Study

Case studies focus on one (or just a few) instances of a particular phenomenon with a view to providing an in-depth account of events, relationships, experiences or processes occurring in that particular instance. (Denscome 2003)
Denscome (2003) points to the strengths of the case study approach is that it allows the researcher to use a variety of sources, a variety of types of data and a variety of research methods as part of the investigation. The use of questionnaires can be used to provide information on a particular point of interest at a specific time during the study.

3.3.1 Why use a Case Study

The anti-positivism paradigm proposes that only time and context-based hypothesis are possible. The positivism paradigm, however, advocates that context and time free generalisations are possible. Since this research is to be undertaken within the context of the authors own school and within time allocated to a normal school day the anti-positivist approach has been selected. The ant-positivist paradigm provides a subjective means through the use of a case study for investigating an issue in that it attaches importance to a range of research techniques that focus on qualitative analysis such as personal interviews, participant observation and personal accounts of participants.

The positivist paradigm view of enquiry is value free whereas the anti-positivist paradigm upholds the belief that enquiry is value bound. The participants in this study are all fellow teachers and as such strive to create a working environment where values are central to our very existence.

The positivist paradigm holds the view that the person and knowledge are independent and separate from each other in that one can exist independent of the other. The anti-positivist paradigm sees person and knowledge are inseparable. It is intended to follow the anti-positivist paradigm as the latter reflects the principles of constructivism for which the author endeavours to implement through his teaching style.
3.3.2 Criticism of Case Studies

Burton and Bartlett (2005) state that a major criticism of case studies lies in the lack of representation of the wider population. As a consequence, researchers are unable to make generalisation of the findings.

Bassey (1990) on the other hand counters this argument in stating “although each case may be unique, there are sufficient similarities to make the findings from one study useful when seeking to understand others.” (Bassey 1990)

3.4 Case Study Methodology

Yin (1994) identifies four key stages for the effective use of a case study:

1. Design the case study,
2. Conduct the case study,
3. Analyze the case study evidence, and
4. Develop the conclusions, recommendations and implications.

Tellis (1997) argues that when these stages are followed the researcher will be deploying a technique that is as well developed as those in any scientific field.

3.4.1 Design of the case study

The first stage in the case study methodology recommended by Yin involves development of a Case study protocol. This stage comprises of two components:

- Determine the required skills
- Development of protocol

(Yin 1994) suggests that the researcher must possess or acquire the following skills: the ability to ask good questions and to interpret the responses, be a good listener, be adaptive and flexible so as to react to various situations, have a firm grasp of issues being studied, and be unbiased by preconceived notions.
The development of the study protocol should include an overview of the case study project which would include project objectives and case study issues relating to the topic under review.

The protocol should identify pertinent questions that the investigator must keep in mind during the course of data collection as a means of ensuring that the researcher will remain focused on the main task.

3.4.2 Conducting the case study

Yin outlines three important stages during this phase of the study.

- Preparation for data collection.
- Distribution of the questionnaire
- Conducting interviews

Once the protocol has been developed and tested it moves to the second phase which is the actual execution of the plan. The collection of data is regarded as the primary activity within the section. Yin (1994) states that data collection should be treated as a design issue that will enhance instruction and the internal validity of the study as well as external validity and reliability. Therefore, it is important to view data collection as an integral part of the project and not an isolated activity.

Data collection in this research study was collected from a number of sources. (Yin 1994) states that the use of multiple sources is considered to facilitate the development of a converging line of enquiry which the process of triangulation is ensured

The use of a variety of research tools allows for the triangulation of results which is regarded as an effective means for ensuring validity. Three separate research instruments were employed for the purpose of gathering data:

1. All teachers within the school were invited to complete a questionnaire.
2. In-dept interview with teachers.
3. A focus group was conducted with a specific subject group of teachers from within the school.

The primary function of the questionnaire is as a tool for using questions to either explain or describe phenomena. (Ryan et al. 2006) The type of population, the research question and the resources available will determine that form the questionnaire will take. May (1999) states that surveys can be presented in three ways:

- Written.
- Oral
- Electronic

May (1999) states that Likert attitude scales are an important factor in the questionnaire design. As a consequence of this, a series of questions were designed where participants were asked to agree or disagree with a number of statements as a means of testing attitudes in relation to the research topic.

The interviews were undertaken with a view to providing a well informed insight into the matter under review. Cohen et al. (2005) defines the interview as a means of evaluating or assessing a persons in some respect for the purpose of gathering data, while Marshall (1995) recommends the interview process as a quality research tool for obtaining data in an efficient manner.

Cohen et al (2005) Describes the interview process as a two person conversation, the objective of which is to extract relevant information.

“Using interviews can provide greater depth, detail and quality of information than can be obtained by using questionnaires alone”

(Denzin and Lincoln 1998)

Tuckman (1972) states that the interview can serve three distinct purposes:
1. As a means of measuring a person's knowledge
2. To test a hypothesis
3. As a tool to be used in conjunction with another research method.

Moyle (2006) states that focus groups in education research can be considered to be conversations that are initiated by the researcher for the specific purpose of obtaining data relevant to the specified research outcomes.

The focus group was considered relevant because it provides the researcher with a mechanism for gaining an insight into the views and opinions of a group in relation to a particular matter. However, Watts and Ebutt (1987) advises caution as a poor dynamic within the group can effect the data collected and individual issues may not emerge as a consequence. In an effort to avoid such an issue occurring careful consideration was attached to the selection of the focus group.

3.4.3 
Triangulation

Cohen et al. (2005) advise the use of two or more methods of data collection in the study of some aspect of human behaviour. Patton (2003) supports this argument and asserts that reliability of qualitative research is enhanced by using different sources of data. Cohen et al. (2005) suggests a reliable means for ensuring validity is to compare one measurement with that of another, this is described as ‘convergent validity’.

The advantage of triangulation is emphasised by Adelman who describes triangulation as a useful technique for a researcher engaged in a case study. Triangulation is of particular use when there is a need to collect witnesses’ accounts of an event in order to establish multiplicity of perspectives relating to a social situation. (Adelman et al. 1980)
3.4.4 Structure and conduct of the interview

The interviews were conducted in the school. Each interview was recorded and each lasted a period of 20 minutes. A semi-structured interview format was deployed which gave the participant an opportunity to express an opinion freely while retaining consistency of structure across interviews.

Each interview started with an outline of the proposed research. Each participant was invited to provide a brief outline of their teaching experience and their existing use of video clips within their classroom. The interview then moved to a more formal structure where questions of a more specific nature were posed. While a standard interview protocol was employed in order to guide the process, participants were encouraged to discuss and develop relevant issues and to challenge the interview question posed.

In addition, the sequencing of the interview questions was based mainly on the interviewee's response rather than on the rigid interview protocol. This provided participants with an opportunity to raise issues that they deemed relevant.

3.4.5 Piloting the interviews

Yin (1994) stresses the importance of conducting a pilot interview prior to embarking on the formal data collection process. He recommends its usefulness as a means of assessing the reliability and validity of the interview questions so that the researcher can refine or modify the questions with respect to both the content and conceptual clarifications.

In order to adhere to Yins observations a teaching colleague from a neighbouring school was engaged to participate in the pilot interview. Based on this trial interview the interview protocol was refined based on the outcome of the pilot through modification to the interview protocol structure and by means of refinement to interview questions.
3.5 **Carrying out the survey**

In order to apply the principle of triangulation it is necessary to supplement the data collected in the course of the interview and focus group with that of data collected using passive or written methods. As with the formal interview a pilot survey will be undertaken with a view to refining the questions posed.

3.6 **Ethical Issues**

Research is often carried out in real-world circumstances, and involves close and open communication among the people involved; the researcher must pay particular attention to ethical considerations in the conduct of their work. Winter (1987) lists a number of principles:

- Ensure that the relevant persons, committees and authorities have been consulted, and that the principles guiding the work are accepted in advance by all.
- All participants must be allowed to influence the work and the wishes of those who do not wish to participate must be respected.
- The development of the work must remain visible and open to suggestions from others.
- Permission must be obtained before making observations or examining documents produced for other purposes.
- Descriptions of participants work and opinions must be negotiated with those concerned before being published.
- The researcher must accept responsibility for maintaining confidentiality.”

Cohen addresses the issue of ethical concerns encountered in educational research and remarks that the research can be extremely complex and subtle and can
frequently place the researcher in moral predicaments which may appear unresolvable. (Cohen et al. 2005)

3.7 Limitations of the Research

While engaged in a research project, the researcher must give due consideration to the limitations of the research methodologies being used. Yin (1994) points to the weakness of case studies that lies in drawing general conclusions for specific instances under review.

Munn and Drever (1990) identify another weakness of case studies, while it can provide an accurate description of the situation under investigation it may not provide an understanding of why that situation exists.

During the design and construction every effort was made to maintain anonymity, however there remains a possibility that since the researcher was known to all participants this fact may influence the result in some way.
CHAPTER 4 FINDINGS

4.1 Introduction

The research findings for this case study are presented in this chapter. The purpose of this study was to determine the use of online video clips in the classroom. In order to achieve this objective it was necessary to devise a means of data collection that would allow a detailed study to be undertaken in order to determine the existing knowledge base and attitudes of the participating teachers. The finding will focus attention on the factors that might influence the use of online video in the classroom and the effectiveness of a video based tutorial on the subject matter under review.

This chapter will review the results and findings from three primary research tools:

- Questionnaire distributed to all teaching.
- Series of interviews conducted with three respondents.
- Focus group comprising of three practical teachers.

4.1.1 Questionnaire

A draft questionnaire was first sent to the researcher’s supervisor for feedback and was then piloted with a number of teaching colleagues in a different school for feedback. This resulted with minor changes being made to the order of the questioned being presented.

The questionnaire was deployed to all the teaching staff of a second level community school on a single staff in-service day. The in-service came as a request of the staff advisory council who canvassed staff on topics suitable for an in-service day. From the canvas it emerged that Information Technology was high on the list so the group discussed the matter with the school principal and from this interaction it was decided to present an in-service day dedicated to Information Technology. The principal played an active role in preparing the necessary resources for the in-service and during this preparatory period he looked at the possibility of involving existing staff members in the provision and presentation of the material. This met with the approval of the general staff body and as a consequence of this initiative the author
was invited to present a module that addressed the issues relating to online video capture.

Following the questionnaire a tutorial on video clip capture was presented to the staff. Since YouTube was blocked within the school it was necessary devise a strategy that could allow participants to view the processes associated with saving video clips while not online within the school. This problem was overcome through the production of three video clips that outline the procedures using Camtasia software. The author produced the material at home and then saved and rendered the sequences and narration to disc. This presentation was then played to staff in the school's lecture theatre in the form of three five minute segments, with each segment outlining a different method for saving online video clips.

The questionnaire was used to obtain a quantitative derived baseline from as many members of staff as possible. The survey also questioned respondents on their views and opinions through a series of Likert scale type questions.

Wherever data is expressed using a percentile manner numbers have been rounded off to the nearest percentage.

The findings of the questionnaire are presented in four sections.

- Participant profile
- Computer related issues
- Technical issues relating to video clips and their application
- Teachers perception of the value of video as a teaching resource

4.1.2 Interviews

The interviews were undertaken with three participating teachers in order to record their views and opinions and as a means of collecting qualitative data which could supplement the quantitative collected in the questionnaire. In addition, the interview provided the participants with an opportunity to express or develop an opinion that may have not been addressed in the course of the questionnaire.

4.1.3 Focus Group

A focus group comprising of three practical teachers was assembled and a series of questions were put to the group. The rationale behind this selection was to gain an
insight into the collective thinking of a subject group as opposed to an individual. The teachers in question had been working together for twenty six years so they were very familiar with each colleague’s teaching style and practice. As a subject grouping they regularly share resources and share the administrative work associated with their department equally between them.

4.2 Survey Data

4.2.1 Participant profile

The rationale behind section one was to establish a broad staff profile in terms of gender, age group, teaching experience and other matters pertaining to existing practices in the school with respect to computer resource and their application. Issues relating to a disparity between technology usage and gender are beyond the scope of this research project and as such were not taken in account when raw data was being processed. The staff had a high percentage of female teachers while the male population accounts for 25%.

When the male and female percentages are cross-referenced with age profile it emerges that 75% of the male teachers fall within the 46 to 55 age bracket while 27% of the female staff fall within the same age group. Eighteen of the female teachers are below the age of forty six as opposed to two of the male staff being under the age of forty six.
Figure 4.2 indicates the distribution of age profile of the teaching staff within the school. 40% of the group fall into the forty six to fifty five age bracket with the twenty six to thirty five age group accounting for 30% of the staff.

![Age Profile of Respondents](image)

The school was opened in 1980 and still retains a number of its original staff. The largest segment amounting to 45% lies within the grouping with between 16-30 years teaching experience. The group with 6 to 15 year experience accounts for 38% of the teaching population. A relatively small 8% of the teaching staff is drawn from the smallest group within the age profile table. This can be explained by a small staff turnover indicating a high degree of job satisfaction within the school.

![Teaching Experience](image)
An indication of the subjects offered in the school and the break down with respect to staff involvement is displayed in Figure 4.4. English, Geography and Mathematics have the greatest number of teachers engaged in these disciplines. The questionnaire invited respondents to enter two subjects of choice as being their main area of teaching.

The subject grouping represented by other represents some minority subjects within the school such as Business, Accounting and Applied Mathematics. Subjects such as SPHE and CSPE are covered by the general body of teachers with no specific teacher engaged in more than two classes per week. For this reason it was not added to the list of subject choices as the author felt that a distorted figure would be returned.

4.22 Computer Related Issues

This section focused on the availability, existing use and condition of computer resources available to teachers. The author was of the view that there was little point in conducting a study into the use of video clips if the necessary equipment was not available in the first place.

Figure 4.5 provides an indication of the existing use of video clips in the classroom. 70% of respondents have never used or have infrequently used a video clip in their
classroom presentations. When the figure of 70% is analysed with respect to subject teachers it emerges that both Irish and Mathematics accounting for 44% of this figure.

History has the highest level of participation with all four teachers indicating that they use video clips at least one a week in class. The four history teachers account for 66% of the total usage of video clips on a daily or weekly basis when compared with the use across all subjects.

![Pie chart showing video clip usage frequency.]

**How frequently do you download video clips**

During the interview with Teacher A the question was posed as to whether they had ever downloaded a video clip. Their response was honest but blunt:

“No. I wouldn’t have a clue how to do it.”

Interview with Teacher A. Irish

A similar reaction was encountered during the interview with the focus group:

“While I have not actually downloaded a video clip but I have viewed them on YouTube.”

N.D. Focus Group

However, when questioned as to the frequency of use of computers for other purposes 65% of respondents used a computer on a daily or weekly basis, (Figure 4.6) Of those questioned, 20% expressed responded as not having used computers for any purpose. Of this 20% it emerges that 60% come from the Irish and Mathematical disciplines. This is a most significant percentage and one that merits further
investigation. As a direct consequence of this, the author interviewed a member of the Irish department with the view to gaining an insight into this area.

![Figure 4.6](image)

How frequently do you use computers for teaching

Figure 4.6

Although participants A classroom is now equiped with the latest computer resources the Irish teach when interviewed remarked that the arrival of the computer into their classroom had absolutly no impact on their teaching style, They added:

"I suppose I’m still teaching the way I did twenty years ago, and the fact that a computer has come in hasn’t really impacted on my teaching”

Interview with Teacher A. Irish

It is a worthwhile exercise to place both pie charts fig 4.5 and fig 4.6 adjacent to each other in order to draw a clear comparsion between the use of computers for general classwork and as opposed to the use of compters for the viewing of video clips. The non use of computers rises from 20% to 40% while the daily figure for usage falls from 28% to 3%. In fact no section of the chart remain the same.
The NCTE operate a system whereby individual websites are categorized with respect to their suitability of content. Video sharing websites such as YouTube store some content that is deemed inappropriate for viewing within a school network. As a direct consequence of this, it is not possible to access these video sharing websites from within the school network. In this survey, 85% of respondents were aware that websites such as YouTube were blocked or screened in the school. Staff may or may not be aware that the blocking actually takes place outside the environment of the school. It is important to emphasize that staff, for whatever reason, should be made aware of blocking and can act accordingly in order to access video clips for use in lesson preparation.
This study was carried out over a period of eight months between September 2009 and March 2010. In order for online video clips to be used as part of a lesson there is a requirement that for the participants to have the necessary resources available to them in order to incorporate video within their lesson. It was important therefore to provide an account of that part that the school principal has made in the provision of computer resources within the school. The school is extremely well equipped and resourced as can be observed from the charts above.

As part of IT 2000 a sum in excess of forty million was made available to provide computer resources for schools. The school associated with this study benefited from this fund but the provision fell far short of what was required if every classroom was to be fitted out with both a computer and projector facilities. With this in mind the Board of Management, using its own resources endeavoured to fit out all classrooms with the necessary equipment. From the survey results it emerges that 85% of the teaching have both a computer and a projector installed in their classroom.
Furthermore it can be seen that 86% are pleased with the quality and condition of this equipment. No respondent expressed a view that the equipment as in any way inadequate or obsolete for their needs.

Teacher B when asked as to whether of not they were pleased with the quality of IT equipment available to them remarked:

“Very much so, we have the latest of equipment, we have computers and projectors. I have a fully equipped room with surround sound speakers, everything’s available to me.”

Interview with Teacher B. History
Teacher C offered a similar opinion:

"Oh very much so, we have the latest, I have a projector computer and the projectors mounted on the ceiling and there’s a pull down screen. The equipment I have is second to none."

Interview with Teacher C. Science

While 87% of those questioned were found to have computer resources in their classroom a figure amounting to 70% were found to have external speakers attached to their computers. This represents a drop of 17% across these two groupings. Traditionally audio visual technology has evolved with a great emphasis being placed on the visual as opposed to the audio. This may go some way to explain why there is a 17% difference between audio and visual equipment. When teachers place a greater emphasis on one specific gateway to learning they run the risk to isolating those students who may have difficulty with that learning medium.

Marshall(2002) cites Gardners Multiple Theory of Intelligence and warns of the danger of traditional teaching methods that include lecturing and textual approaches that may only appeal to learners who learn only by the linguistic approach. Teaching methods that include both the use of video and audio will in effect reach more students and provide more opportunities for neural development and learning.

![Figure 4. 11](image-url)
In order to play a saved video clip from a video sharing website such as YouTube the computer must have a player installed that can read the FLV file format. None of the pre installed Windows player is capable of reading these files.

In many schools the issue of software installation is controlled by the network administrator who normally works in conjunction with the school principal to an agreed network policy. 52% respondents did not know if software installation was possible with 32% being under the impression that it was possible to install software of your choice.

If teachers are to embrace the use of video clips then they must be familiar with the technology associated with the practice. Only 13% of respondents had received in-service that addressed the issue of video clip downloading and are all drawn from different subject disciplines. No pattern emerged in terms of in-service provision from within the subject groupings. There is no evidence to suggest that any one particular subject area has been treated differently to any other.

However, when subject taught are cross referenced with those who have received in-service training it emerges that all four practical teachers had undertaken in-service that addressed the issue of video clips. It emerges that all four teachers were part of a programme “T4” which provided a series of ten in-service days as part of a new Design & Graphic Communication syllabus.
Only 21% of those questioned were familiar with how to download video clips. When cross referenced with the previous question in fig 4.12 it emerges that the 13% who had received training were accounted for in the 21%. The remaining 8% were not questioned as to how they had accessed the skills required to download video.

Figure 15. examined the issues that prevented teachers using on-line video in the classroom. Lack of knowledge emerged as the most significant factor in this question. Lack of time was the second most popular reason for not using on-line video in the classroom. 10% of respondent felt that there was little contact of
relevance available to them. When this question is cross referenced with subject taught it emerges that Mathematics accounts for 50% of the total surveyed.

When questioned on this issue Teacher C remarked:

“On a personal nature I suppose not knowing how to do it would be the main factor. I suppose lack of time would be another factor in that I just don’t have the time and I don’t know where I would get the time to do it. I see the young teacher trainers, the dips, coming in and they have a huge range of material alright but certainly I don’t know where they get the time or the enthusiasm to do it.”

Interview with Teacher C. Science

Teacher A concluded when question on this issue:

“I suppose the main one is not knowing how to do it, I would be very nervous about doing it and then trying to use it, I just wouldn’t know where to start.”

Interview with Teacher A. Irish
4.2.3  Technical issues relating to video clips and their application

Statements relating to the use of video clips in this section were presented to respondents on a five point Likert scale. The scale ranged from “strongly agree” to “strongly disagree”. Cohen et al. (2005) adds that the use of a Likert scale provides the respondent with some degree of latitude in terms of the degree of response as different people may interpret the question in different ways. As a consequence of this it may not be valid to separate “strongly agree” from “agree” while collecting data. Furthermore, the Likert scale should be used only as a means of recording general agreement, uncertainty or disagreement.

An understanding of the different file formats that are available was questioned in fig 4.16. It emerged that 77% of respondents were not familiar with the different file formats employed in online video. While it is not a requirement to have an understanding of file formats in order to download video clips it is still an issue in terms of integrating with other applications such as PowerPoint. Furthermore the 5% of respondents were familiar with file format issues had received in-service training.

![Figure 4.16](image)

Figure 4.16 focused on the ability of respondents to save video clips onto a computer. 26% had the necessary level of skill required to save a video clip while in the previous question on 23% had a knowledge of file formats.
There to be an increase in the use of short advertising clips that runs prior to the main content in uploaded video clips. Many video up loaders see this as a means of gathering revenue from advertisers and will defend this practice as a means of covering expenses. Since most uploaded video clips are limited to ten minutes theses advertising segment can often run to three minutes of the ten available.

The ability to be able to edit theses clips with a view to removing the advertising content would be an advantage to the user. Participants were questioned on their ability to edit video, 87% of respondents had little or no knowledge of how to edit a video clip once downloaded.
During the interview with the focus group it emerged that Teacher ND. was very interested in gaining some exposure to the technology employed to produce the tutorial, ND remarked:

“The presentation itself was exceptional. The ability to add your own commentary to a video clip has huge potential for our subject area”.

Focus group. Teacher ND

Teacher MON stated :

“I would like to try that too. I have over thirty years of practical experience available to me. In fact over seventy five years between the three of us. That’s difficult to discount”

Focus group Teacher MON

These remarks suggest that there is both a willingness and interest on behalf of teachers to develop their own teaching resources through a mixture of video clips and their own narration. In this way many years of valuable experience can be deployed
for the betterment of their subject area. Unfortunately the skill based required to engage in these activities is sadly lacking to such a degree where only 13% have the necessary skills.

There is a bewildering choice in terms of video clips availability. YouTube alone has in excess one hundred and twenty million clips available for downloading which represents approximately six hundred years of viewing. The emergence of portals such as Teacher Tube goes some way to addressing the issue of cataloguing in terms of content. 42% of respondents had a good knowledge of where to search for relevant content that could be employed within their own discipline. There appears to be quiet a contrast between subject groupings when it comes to the availability of video clip resources with teacher C stating:

“Well within the physics, in fact within all the sciences, there’s a huge range of material available on the internet, a huge range.”

Interview with teacher C. Science

Teacher A however, was not aware of there being any material relevant to their subject.

“As far as I’m aware there is very little available within the subject Irish”

Interview with Teacher A. Irish

This reaction raises a concern that some teachers are isolated within their subject area from material that might be relevant and readily available to them.
Regardless of whether a teacher uses video clips as part of their lesson, participants were questioned as to whether they felt they were making best use of the technology available to them. 90% were of the opinion that they were not making best use of the resources available. This suggests that respondents were indeed aware of the value of the technology and were also cognisant of the fact that could use this resource more effectively.

“In terms of the computer resources available no I don’t. I suppose I’m still teaching the way I did twenty years ago, and the fact that a computer has come in hasn’t really impacted on my teaching

(Interview with Teacher A. Irish)

“I suppose if it was a bit more organised I could make better use of them, I do make some use but I suppose I could always make better use of them”

(Interview with Teacher C. Science)
4.2.4 Teachers perception of the value of video as a teaching resource

Teacher’s perceptions of the value and usefulness of video clips was examined in this section of the survey. The target group were not aware of the question prior to the survey being carried. As a consequence of this the results returned represented a reflection of their own experiences to date with respect to the value of the contact under review. Respondents were asked if the use of video clips helped students in gaining a better understanding of the content being present. 84% (fig 4.21) were of the opinion that video helped student’s gain a better understanding of the subject matter while 13% did not know. Only one respondent held the view that video clips did not enhance the learning experience.
When question if video clips helped students understand content, teacher B remarked:

“*Oh very much so, particularly with senior classes, you can be talking about a moment in history and then you could show a video clip and you can actually see the footage. It could be something that happened, a moment in history, or a place but certainly, for example the industrial revolution is very well covered*”

Interview with Teacher B. History

Teacher C was also in agreement:

“I would think they do, there very useful. There are a lot of experiments that I would be doing with the class and I suppose because I am at the front of the class they would have difficulty in seeing them but now you can actually present these experiments on the screen and it’s most beneficial to students.”

Interview with Teacher C. Science

An almost identical set of results was found in fig4 where respondents were asked if complex principles could be explained through the use of video clips.
Nowadays, students have a far greater deal of exposure to video than previous generations. The technology is nothing new to them and it is unlikely that the vehicle of video alone will enhance their motivation to learn. 65% of respondents held the view that students like the idea of learning through the use of video as opposed to text or audio alone. The results support existing case studies that have found that the learning experience is enhanced when a mixture of audio and visual is employed rather than a single mechanism.

Respondents were invited to categorise in order of importance a number of statements that reflect on the value of video clips in the learning experience.
72% of respondents felt that video clips were best employed as a means of reinforcing and expanding on the learning experience.

44% of respondents placed the need to cater for different learning styles as the second most important issue from those presented in the questionnaire.

The presentation of information diagrams with textual information as deemed to be of importance by 36% of respondents.

The quality of video clips ranked forth in the survey with a weighting of 33%.

Video captions were found to be of limited value in the overall scheme of what was offered in terms of question choice. It is worth noting that the value of subtitles used with video rose considerably when cross-referenced with foreign languages.

The use of video clips as merely a reward was relegated to 6th place. Respondents were well aware of the intrinsic value of video as a vehicle for the transfer of knowledge as compared to using it to reward good behaviour in the classroom.

In Fig 4.24 respondents were asked as to the stage within each lesson that video would have the most influence. 35% of respondents placed the use at the start of a lesson in equal weighting with that of clips threaded throughout the lesson. Teachers did not look favourably on the notion of either using video as the main element in a lesson or for its use as a revisionary tool.
The question on filtering restrictions being imposed on the school network is of great importance. There is a huge range of material ranging from the good to the unacceptable available for downloading from the internet. Some statutory body must dictate what is deemed to be acceptable policy for use in the school environment. 51% of respondents felt that filtering should be removed while 49% expressed a view that it should remain.

Teacher B was very much against the issue of blocking internet access, he added:

“I’m totally against it. I am aware that there are issues with content that’s not suitable but I don’t think you should restrict something just because there is something bad there in it, were talking about the potential to misuse something and I think that type of censorship immediately rules out the positive features just to negate the negative ones”.

Interview with Teacher B. History

4.3 Focus group interview session.

The focus group interview centred on the views and opinions of three practical teachers and focused on the use of video clips within their subject area. All three
held the view that the use of video clips was an integral part in the development of their subjects. During the interview it emerged that a commercial set of DVD’s was available for purchase but the material was of limited use due to the overall presentation, quality and accuracy of the material presented.

“Initially I thought that we had everything contained here within the set of DVD’s but now that we have it there are some areas that are simply inaccurate or at best out of date with current regulations”

Focus group. MON

The group were very much in support of the view that the use of online video presented great potential as a teaching aid when compared with the traditional approach of text book. Since such a large part of the course has a practical bias attached it makes it difficult to relay practical procedures through the pages of a book. The ability to be able to supplement this textual approach with relevant video clips would in the opinion of the focus group, increase the student’s knowledge and add to their understanding of the material under review.

“A great deal of what we teach is presented in diagrams such sections through buildings to practical installations”

Focus Group. ND

The group was then questioned on their view as to the how the existing DVD material was presented.

“You have to load the disc and then find your way to the relevant material, once you find it I have no knowledge of how to save it as a separate video as opposed to it placement on the disc”

Focus group. MON

The group held the view that it would be far better if the material was stored on the school network in the form of short clips thereby making it more accessible to individual teachers and in terms of easier access to the clip required.
The group were then questioned on their existing use of online video clips. It emerged that all four had viewed clips at home but none had downloaded a clip for use in class. The main issue here lay with the huge range of material available for viewing as opposed to its availability.

“You could spend your lifetime on YouTube watching videos, one better than the next”

Focus group. MON

The issue appears to focus on how to make best use of what is available as opposed to the material not being available. While there did not appear to be a problem with the availability of content there was no evidence or suggestion to the existence of a plan to exploit its potential by making the material available for viewing within the school.

“It would be great if we had a selection of video saved for use on the school server”

Focus group. MON

The group were not aware of any resources being made available by their subject associations. The group did concede however that a number of clips were held on one participant’s computer. It appears that a student teacher had undergone teaching practice in the school and he had a large number of video clips in his possession. A copy was made of this material but the person in question had no idea as to where it was or as to what was on it.

“I did see him using it in class and the students were really impressed with it. Actually I was impressed with it myself and found it to be very useful. The problem is I don’t know as to where the disc went”

Focus Group SC
When asked if they would be interested in getting together to create a selection of video clips all four were in agreement in principal but expressed reservations in terms of the actual process actually sourcing and downloading the videos.

“I like support the idea of having all the material saved for use in the school but in reality I don’t have the time or the interest to go through the whole process” “I do realise that ultimately it would make my job easier but there is a lot of work associated in getting it all together”

Focus group. MON

The tutorial based in-service was the discussed and all four expressed a positive attitude towards this imitative.

“It’s exactly what was needed, the way it was presented was exceptional – the ability to add your voice to an existing video has huge potential within our subject- I would really like to learn about how to add your own commentary to a video- now there’s and area with great potential”

Focus group ND

4.4 Summary of findings

The finding of the research indicates that the majority of staff do not use video clips as part of their lesson plan. Staff did appear to have all the necessary computer equipment available for use in their classroom and did appear to use theses resources on a regular basis.

The study found that there was a low level of understanding on how to download online video clips for use in the classroom as opposed to simply viewing a clip online in the home environment. Participants were aware of the potential value of video clips but had not grasped the issue associated with its use. This factor had not been addressed in any in-service made available by subject area associations or by the Department of Education and Science.
Some subject department appear to embrace use video clips on a far more regular basis than others. The reasoning behind this would require further study in order to provide a clearer understand of this issue.
CHAPTER 5 DISCUSSIONS

5.1 Introduction

In recent years emergence of multiple online video-sharing sites coupled with the rapid growth of video content is compelling from an educational perspective. Along with this new technology comes a challenge to teachers and educational researchers in terms of how best to embrace this technology for use in the classroom. The presence of this huge repository of content is intriguing due to the potential value for educational gain and the fact that most web sharing site are blocked by schools.

This chapter discusses issues that have arisen from the literature review and from the research findings as presented in the previous chapter. The discussion will focus on the following key areas:

- Educational value of web based video clips in education
- Limitations and challenges associated with the use of web based video clips
- Participant profile and its role in the use of video clips in education
- Technical and computer issues relating to the use of video clips in classrooms
- Teacher perception on the value of web based video clips.
- Other matters arising from the findings

5.2 Educational value of web based video clips

One of the aims of video based education is to facilitate a blending of technology and pedagogy that suits a particular objective and preferred technology style.

This style enables teachers to provide online video clips that present a degree of flexibility and availability to the student, regardless of time, place or the individuals pace of learning.

According to Pavio (1986), the use of video taps the learners audio and visual channels in the brain and enhances students learning effectiveness. Mayer’s (1997)
view of multimedia learning supports Pavio’s assertion and acknowledges the existence of an auditory and visual method for allowing information to be coded and processed.

Mayer warns of the danger of “cognitive overload”, which results from too much information being presented to the brain in the form of text and visuals. Advantage should be taken of the dual coding tenant by providing information to both the visual and auditory senses through the medium of video. By incorporating a video clip into a lesson, teachers provide students with information that is delivered through a medium that addresses all their learning senses. This may be accomplished by showing a video clip as a means of explaining a complex visual diagram rather that expecting a learner to read between text books and a blackboard.

Recent initiatives have raised the profile and acceptance of web sharing sites such as YouTube. In 2007, the University of California Berkeley became the first University in the United States to post full academic lectures on YouTube. The university is heralding their tradition of open educational content and demonstrating a philosophy of sharing knowledge and events with millions around the globe.

Research undertaken by Marshall(2002) indicates that video clips do have a positive effect on the learning experience. The findings of the study conclude that 70% of participants in the study have not used video clips in their lessons. Since the body of evidence would appear to support the argument for the use of video then the author must question the reason as to why so few teachers have embraced video clip technology within their lessons.

5.3 Limitations and challenges associated with the use of web based video clips

There are a number of areas that have an adverse effect on the value of web based video sites. Issues such as copyright, credibility of content and inappropriate material need to be addressed. Within the Irish context the blocking of theses video sharing
sites appears to be severe. There is simply no way to access the content from the confines of the school.

The findings from the questionnaire provide an indication of how teachers view this issue with 51% expressing the view that no blocking should be placed and 49% indicating an opinion that blocking should be in place. The issue appears to focus on the content that can be accessed by the students. One possible solution may lie with the model that is employed by TeacherTube where one must be registered as an educator before a posting can be made.

The issue of bandwidth is another issue that negates against the use of sites such as YouTube in schools. Under normal circumstances schools only have a set amount of bandwidth available. Streaming video places demands on this resource and could result with other computer users in the school have a reduced service on the network.

Copyright concerns have recently become an issue in terms of that can be legally viewed in the classroom. There is a degree of uncertainty in terms of what can and cannot be used as a large amount of video clips have infringed issues of copyright by the very fact that they have been uploaded without the consent of interested parties.

5.3.1 Technology and Pedagogy

In an effort to integrate technology with teaching pedagogies the emphasis must always be placed on sound teaching strategies as opposed to a focus on the technology employed to deliver the content. (Diaz 2001)

In reality, it is the author’s experience that most technology based in-service focuses on the technology in terms of how one “use’s it” while making an assumption that the end user can adapt the material covered into their own teaching strategies.

Benson (1997) noted that traditional staff development and in-service training methods are ineffective for helping teachers to use computer technology as an instructional aid. In order to move away from traditional model of in-service training
it is necessary for teachers to engage in a reassessment of their own teaching methodologies if technology is to be successfully integrated into their teaching strategies. (Yonnie 2001)

Ultimately the successful integration of technology into education depends on the individual. According to Pierson (2001), technology integration practices are related to individual teachers’ levels of teaching expertise, their definition of technology integration, and pedagogical expertise.

5.4 Factors influencing the use of video clips in education

This study examined the factors that inhibited the use of video clips as part of a lesson. 64% of respondents expressed an opinion that their lack of technical knowhow presented the greatest impediment to its use. This view was verified by a number of the interviewees who stated:

“On a personal nature I suppose not knowing how to do it is the main factor”

Interview with Teacher A.

“The main one is not knowing how to do it….I just wouldn’t know where to start”

Interview with Teacher B.

Only 15% of respondents selected lack of time as the main issue that prevented them from using video clips in their lessons. This is a very interesting observation when one considers the additional workload that has been placed upon teachers over the past number of years in term of new syllabi and changing examination structure. A figure amounting to 10% held the view that lack of relevant material was the biggest factor that inhibited their use of video clips. It is interesting to discover that when this group was cross referenced with their subject group it emerged that they were drawn from the Irish and mathematical departments.
There appears to be quite a contrast in the range of online video content that is available across different teaching disciplines. Teachers of Science were very pleased with the material available to them. This opinion was voiced during the interview with the science teacher who stated “Within all the science subjects, there’s a huge range of material available” The history teacher stated “There’s a huge range of material available for history, in fact the difficulty lies in deciding just what to use” However, the Irish teacher held the view that while there was online resources material available there was no video content available.

The diversity of opinion between different subjects groups is an area that warrants further discussion. Where does the responsibility lie for the provision of content or resource material? Are the Science teachers simply fortunate to have a plentiful supply of resources available to them or are the Irish teaches simply unfortunate to have such meagre resources available to them.

There was broad agreement across those interviewed for the formation of a video clip sharing repository within subject groups and respondents expressed a willingness to take an active part in making some form of video available to the group.

5.5 Technical and computer issues relating to the use of video clips in classrooms

The findings of the questionnaire showed that only 23% of respondents had knowledge of video file formats. Respondents were not aware of the need to have a particular type of media player installed on their computer in order to play a FLV file. Furthermore, respondents were not aware of the issues associated with embedding a video clip into a PowerPoint presentation.

Only 13% of respondents had the necessary knowledge required to perform some form of edit on a video clip. Respondents were not aware that it was not possible to edit an FLV video file in most of the available software suites without first converting the file to another format. At present, editing a FLV is restricted to a
small number of specialised software applications which are beyond the reach of most practicing teachers. As a consequence of this teachers are not in a position to remove advertisements or other irrelevant material from the clip prior to use in the classroom.

During the focus group discussion it emerged that there was considerable interest among the teachers participating with the practice of overlaying their own narration onto an existing video clip. Teacher ND argued that:

“The ability to add your own commentary to a video clip has huge potential within our subject area”

The storage of saved video clips was another issue that emerged from the focus group. The blocking of video websites within the school network places a requirement on the teacher to download the video clip outside of the school. Teachers are faced with the choice of either using their own computers in class to present the clip or to save the clip to a storage device for transportation into the school. Due to security issues within the school teachers are normally denied direct access to school servers, this factor in itself creates additional problems for the archiving and sharing of video resources with subject groupings. During the questionnaire respondents were questioned on the degree of accessibility they enjoyed with respect to administration privileges on their computers. Only 32% of those questioned indicated an awareness of having some administrative rights on their computers.

5.5.1 Teacher in-service

If teachers are to make best use of computer related resources they must first be provided with the necessary skill base required to download, save and use web based video content. The findings indicate that the level of in-service provided to teachers within the schools was limited in nature. From the questionnaire it was emerged that only 13% of the respondents had received in-service that addressed the use of web based video clips. Opinion from the focus group favoured school based in-service ideally
presented by their teaching peers. Participant MON stated “I really liked the idea of having your own colleagues as presenters…you are far more at ease with them…and have the added bonus of them being in the school should you feel the need to refer to them for help.”

This argument is supported by a report on IT2000 which states:

“If training could be provided in schools for teachers using their own school equipment, this would encourage teachers to put their training into practice”

(ICT Ireland 2005)

Twenty-first century technology and its resultant effect on learning, assessment and student performance needs to be explored in greater depth at every level of teacher development and across the subject areas. Teachers must be provided with a blend of in-service that addresses the technical issues relating to the use of online video but also on the pedagogical issues associated with computer aided education. Many of the courses, while excellent courses in their own right do not provide enough pedagogical background to enable teachers to create lesson plans for students. (ICT Ireland 2005)

Today's on-line video technologies afford opportunities for enhancing students' access to up-to-date and even up-to-the-minute material and experiences that can only be relayed through the use of video. Marshall(2002) supports a teaching method that includes the use of video and audio and adds that it will, in effect, "reach more students and provide more opportunities for neural development and learning.

5.6 Teacher perception on the value of web based video clips

Regardless of the participants knowledge and understanding of how best to utilise video clips in education 84% expressed a view that video clips helped a student gain
a better understanding of subject matter. This is a significant percentage and this opinion was echoed in the interview with the Science teacher who stated:

“They have a hugely positive role to play.....Within science there is huge potential for its use”

Marshall(1997) supports this view and argues that traditional teaching methods may only appeal to learners who learn through a particular linguistic approach while teaching methods that include video will reach more students by providing an environment for neutral learning.

There was broad acceptance voiced to the value and potential of video clips within the focus group. Teacher MON voiced the opinion of the group in stating:

“We feel there is huge potential for their use in the classroom.... Video covers material in a different way than through the use of traditional methods of textbooks and blackboard”

The focus group spoke of the use of video clips to externalise the learning experience through displaying footage of practices and principles that existed far beyond the confines of the classroom experience.

Herschel and Jones (2005) views this form of technology as offering the most promise for enabling the efficient transformation of tacit knowledge to exploit knowledge through externalisation.

Some 90% of respondents held a view that they were not making best use of video clips within their subject area. When questioned teachers expressed their satisfaction with the level of computer resources available to them so there must be some other reason for this low level of satisfaction among participants. It may well be the case that teachers have not adapted their teaching style to include the use of video clips.

“I am still teaching the way I did twenty years ago, and the fact that a computer has come in hasn’t impacted on my teaching”
Back as far as 1986, Larry Cuban (1986) argued that computers, as a medium of instruction and as a tool for student learning, are largely incompatible with the requirements of teaching. Little appears to have changed within those twenty four years, teachers have been slow to address computer aided technology and where it is used it is simply to replace the blackboard with a screen or projector.

The computer and computer applications that Cuban spoke of in 1986 have changed by orders of magnitude. What passed for computer technology then would be viewed as primitive in today’s world. Applications such as email, World Wide Web and video technology have emerged to change the face of computer aided education.

So has the emergence of new online video application made technology more compatible with teaching strategies or has it served to widen the gap that previously existed between the computer and the requirements of teaching.

Lam (2002) argues that teachers fail to use technology not because they are technophobic, but because they cannot understand how technology could be utilised in their teaching practices, or have doubts about the usefulness of technology.

While participants were accepting of their non use of the computer resources available they were in agreement as to the potential value that the medium offered. The problem appears to be incorporating video clips in a meaningful way into their lessons in a manner suggested by Lam.

Participants also voiced their opinion of how to deploy video clip to maximise the medium potential. During the focus group session Teacher SC stated that there was huge potential when used for revisionary purposes. The fact that you would pause and replay relevant sections also appealed to members of the focus group. With the questionnaire 82% of those questioned indicated that using video clips for reinforcing and expanding on content was their first from a selection of five possible outcomes. Catering for different learning styles came second from the selection
criteria offered with reward for good behaviour representing respondents least preferred value of those offered.

5.6.1 Criticism of YouTube

One criticism of video clips lies in the authenticity of its content presented. At present there is no monitoring of content with respect to accuracy on YouTube. Teachers must be aware of this at all time and take steps to establish that the material they use is accurate and up to date. YouTube itself has posted a user agreement that states the following:

"YouTube makes no warranties or representations about the accuracy or completeness of this sites content....

(YouTube 2010)

The ease and accuracy at which one can search for relevant content is based solely on the title attached to the video clip and to the keywords or tags added by the provider. If relevant keywords are not used then this may result with useful video clips being absent from a search return based on pertinent the keywords not being employed in the search. It is there very important for providers to give careful consideration to keyword selection with respect to the end user before uploading.

The issue of sourcing relevant video content was addressed in the questionnaire. 42% of respondents felt they had a good knowledge of how and where to source material. A similar view was expressed during the interview when teacher Science teacher BD stated:

"There is a huge range of relevant material available"

BD Science Teacher
5.6 Other matters arising from the findings

Possibly one of the most interesting finding to emerge from the study related to the ratio of female to male teachers. 25% of respondents were male and of this percentage only two out of the ten men surveyed were under the age of forty five. The female age distribution from the thirty participants found eighteen to be under the age of forty six. The repercussions of this gender imbalance will come into play over the next ten years as the aged male population retire.

These finding give rise to two questions:

1. Why are there so few men engaged in teaching as a whole ?.
2. Why have so few men entered the teaching profession in the past twenty years ?.

In a survey undertaken by the Scotland Government in 2003 researchers concluded that:

“The reasons for the feminisation of the teaching workforce include the continuation of gendered subject choices at an early age which lead to the reproduction of traditional expectations of future careers”

(Scottish Government 2003)

The Scottish Government study produced findings very similar to the research findings presented in this study which revealed a male teaching cohort of 25% within Scottish second level schools. The report advances the argument that men bring a variety of interests and personal characteristics into teaching which enrich the social and intellectual life of the school (Scottish Government 2003)

Within the Irish school system there is a growing awareness for the need to provide students with a balanced structure that provides a level of understanding and empathy that was lacking in the past. Can the teaching profession provide such a
structure when a gender imbalance exists that is not reflective of what pertains in Irish society as a whole?
CHAPTER 6 CONCLUSIONS

6.1 Introduction

It is difficult to deny the positive impact that IT2000 has had on Irish schools in terms of computer resources in schools with practically every classroom having access to computer related technology. However, the argument relating to impact that this investment in computer technology has had on teaching and learning strategies remains somewhat in question.

Successful use of technology is determined by its ease of use, the degree to which it remains a tool rather than the focus of learning. Technology is a means to deliver the education, and for successful learning to occur it must be integrated into teaching strategy in as seamless a manner as possible.

Persky (1990) views the issue of technological training as providing an instructional focus that guides teachers to think first about their curriculum and then helps them address how to integrate technology into the curriculum.

In order to insure this seamless integration each facilitator must first be comfortable using a particular technology before implementing it in their lessons. There is a danger that teachers will focus on trying to master the technology side of preparation to the detriment of the pedagogical issues associated with its delivery.

6.2 Curriculum Changes

6.2.1 In-service

The issue of in-service is one that gives rise to considerable debate. At present in-service is provided to a target group of teachers from a particular subject group in a venue removed from the participant’s school. There is little consideration to issues such as existing skill level or the needs and requirement of the individual teacher and student. Brand(1997) advises against such a policy and argues that staff training programs designed for the
technological development of teachers are effective when programming offers flexibility and is not based on a "one size fits all" philosophy.

Teachers must play an active role in the area of in-service provision with a view to establishing in-service that is relevant their own needs. Selinger (2004) identifies a need for teachers to make themselves aware of developments within the area of computer assisted learning thereby enabling a greater understanding of what is required. Without this investment, minimal change will ensue due to the teacher inactivity in the process as teachers will feel removed from the process. Pesky (1990) supports this view and reaffirms the need to provide adequate training as an essential factor in developing teacher confidence and thereby maximising potential outcomes. During the research study it emerged that teachers did feel removed from the process of in-service provision, and it was only through their own staff advisory committee that their needs and requirements were satisfied.

During the research undertaken for this thesis it emerged that teachers viewed the issue of in-service in a favourable light and expressed a preference for undertaking in-service in familiar surrounding and under the tutorage of a teaching colleague from their own school. Participants like the idea of working in a familiar surroundings and were keen to have the tutor available to them within the school so that they could seek advice or help when required. Brand (1997) supports the principle of peer coaching as it establishes in a one-to-one tutoring situation, is effective because it does a better job of addressing the unique learning needs of individuals.

Respondents also made reference to the provision of in-service over a number of sessions. They voiced a view that quiet often they forgot what had been covered and had no way of revising the material since the in-service was normally “once off” and felt it would be of far more benefit if it was present sequentially, over a period of time with sessions that would progress and develop the issues concerned. Persky (1990) supports the view that using technology is not easy exercise and that learning how to effectively use technology in the context of the classroom does not happen overnight.
6.3 Value of video clips

Notwithstanding the difficulties that teachers have outlined with their existing use of video clips there was broad agreement among participants in support of the value of such clips. Support was forthcoming from the participant interviews, focus group and the findings obtained from the questionnaire. Support for this conclusion was reflected in a study carried out by Mehra and Mitral (2007) who found that in spite of the faculty members feeling that the use of instructional technology tools was beneficial for students, there was found to be no significant relationship between the pedagogy followed and perceived usefulness of instructional technology tools.

The issues of relevant resources needs to be addressed as a collaborative approach to the collection of resources on behalf of subject groupings would remove the issue of teachers assembling resources in isolation.

The incorporation of video clips into teaching into ones teaching practices has a number of important advantages in terms of teaching methodologies and strategies. I a recent report prepared by International Conference on ICT for Education the following key point were identified:

- Flexible Review: Video can be rewound, paused, advanced and slowed down in order to facilitate discussion and debate.
- Visual Representation: Learning through visual representation of real situations and can bridge the gap that exists between theory and reality. Video connects students with issues and situations that exist beyond the classroom in a way that existing methods cannot match.
- Permanency: Video delivers a permanent record of an event or activity that can be archived for future posterity.

(RTI International 2007)
6.4 Recommendations

Based on the research findings presented in this study it is evident that the issue surrounding the use of video clips within the confines of lesson planning needs to be addressed across a range of areas:

- In-service training to provide the necessary skill based required downloading, edit and storing video clips.
- The provision of a teacher’s forum where the issue of computer aided teaching and educational pedagogy can be studied as key components of an educational strategy as opposed to each being viewed and studied in isolation.
- The need to formulate a strategy within each subject group and association to address the need for the creation of an online repository of video clips that can be sourced and commented by subject teachers across the country.
- Given the large investment that the Irish state has made into Information Technology in Irish schools it would seem appropriate to investigate the relationship that exists between the use of IT with existing teaching pedagogies and the development of new pedagogical practices that reflect new technology and its impact on teaching.
- The development of an in-service policy that reflects the needs of individual schools as opposed to a national policy.
- Within each school an inventory should be carried out to identify the requirements of individual teachers and subject departments with respect to Information Technology.

The issue of gender balance and age profile with the second level teaching cohort structure needs to be studies in detail to establish the following:

- Why are so few male entering the teaching profession
- What impact will the exiting of an ageing male cohort of teachers over the next number of years have on our educational system?
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YouTube (2010) 'Get started with your account', [online], available: [http://www.youtube.com/create_account](http://www.youtube.com/create_account) [accessed 9/05/2009].
Dear xxx,
I am writing to ask for permission to conduct a research study within the school. The research study is being submitter in part fulfilment of the requirements for the MA IN Digital Media in Education qualification at the University of Limerick.

I believe that the study will benefit to the school in that it will examine the existing use of video technology within our teaching practice and as such can be used in future planning with respect to Information Technology.

In order to carry out the survey I plan to distribute the questionnaire during the in-service day that you have planned.

The anonymity of the school and all staff members will remain confidential and either the school or any of the participants will be identified in the final report.

Regards,
Tom Cash
Appendix B

Questionnaire cover letter to staff

Dear colleague,

Attached is a questionnaire on the use of online video clips in education within our school. This survey forms a central part of a study that I am undertaking with University Limerick. I am interested in researching the use and application of video clips within our school and would be most appreciative of you completing the survey to the best of your ability.

At no stage will your identity be revealed to any person and would ask you to refrain from identifying yourself on the survey document.

Regards,
Tom Cash
Appendix C

Letter to Focus Group

Invitation to participate in a Focus Group discussion on:
The use of video clips in teaching.

Wedensay  4pm to 5pm
Venue: Teaching resource room, Colaiste Chiarain.

Purpose:
Following on from the recent survey that you participated in, it is necessary to assemble a focus group to allow for a more indebt discussion of matters pertaining to the use of video clips in education.

I would very much appreciate your participation in the focus group which will take the form of an open discussion that will not exceed thirty minutes.

Topics to be address will include the following:
• The existing use of video clips in your teaching style.
• Your opinions and views on the technology
• The most effective way to integrate thee technology
• Planning into the future.

The discussion will be recorded to allow for subsequent transcription. In the published study your identity will not be revealed and any comment passed will remain confidential.

Please notify me if you are prepared to participate in this forum

Yours Sincerely,
Tom Cash
Appendix D

Questionnaire to all staff

Staff survey

Instructions

Answer questions as they relate to you. For most answers, check the boxes most applicable to you or fill in the blanks.

<table>
<thead>
<tr>
<th>Section 1</th>
</tr>
</thead>
</table>

1. Please specify your gender.
   (Select only one.)
   - [ ] Female
   - [ ] Male

2. How old are you.
   (Select only one.)
   - [ ] 21 or less
   - [ ] 21 to 25
   - [ ] 26-35
   - [ ] 36-45
   - [ ] 46-55
   - [ ] 56-65

3. How long have you been teaching?
   (Select only one.)
   - [ ] Less than 5 years
   - [ ] 6-15 years
   - [ ] 16-30 years
   - [ ] 31 years or more

4. Select your main subject areas.
   (Rank responses from 1 to 2.)
   - [ ] Mathematics
   - [ ] English
   - [ ] Irish
   - [ ] Foreign Language
   - [ ] Science
   - [ ] ICT/IT
5. How frequently do you use downloaded video clips as a teaching resource.  
(Select only one.)
☐ Daily (once or more per day)
☐ Weekly
☐ Monthly
☐ Infrequently (less than one per month)
☐ Never

6. How often do you use computers for teaching (e.g. Internet, PowerPoint, Word Processing, Excel, etc.)?  
(Select only one.)
☐ Daily (once or more per day)
☐ Weekly
☐ Monthly
☐ Infrequently (less than once per month)
☐ Never

7. Are you aware that YouTube is blocked in this school.  
(Select only one.)
☐ Yes
☐ No

8. Have you access to a computer and projection equipment in your classroom?  
(Select only one.)
☐ Yes
☐ No

9. How would you rate the quality of this equipment.  
(Select only one.)
☐ Excellent
☐ Adequate for my needs
☐ Inadequate
10. Have you external speakers connected to your computer?
(Select only one.)
☐ Yes
☐ No

11. Can you install software of your choice on the computers if needed?
(Select only one.)
☐ Yes
☐ No

12. Have you received any training or instruction in how to download online video content?
(Select only one.)
☐ Yes
☐ No

13. Are you familiar with how to download online video content outside of school for use in the classroom?
(Select only one.)
☐ Yes
☐ No

14. What is the main issue preventing your use of online video clips in your classroom?
(Select only one.)
☐ Lack of time
☐ Lack of knowledge in terms of how it might be done.
☐ No relevant material available to me
☐ Other, please specify:

Section 2
With respect to your existing opinion on the following:
Please indicate how far you agree or disagree with the following statements:

15. I have a good understanding of the various video file formats available
(Select only one.)
☐ Strongly agree
☐ Agree
☐ Disagree
<table>
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<th>Question</th>
<th>Strongly disagree</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>16. I have the skill to save video clips on a computer.</td>
<td></td>
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<td>(Select only one.)</td>
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<td>□  Strongly agree</td>
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<tr>
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22. Students prefer video to other media (text, images, audio)
(Select only one.)
- Disagree
- Strongly disagree
- Don’t know

23. Student test scores decline when video is used
(Select only one.)
- Strongly agree
- Agree
- Disagree
- Strongly disagree
- Don’t know

24. Student concentration declines after viewing video clip
(Select only one.)
- Strongly agree
- Agree
- Disagree
- Strongly disagree
- Don’t know

25. Restrictions should not be placed on video hosting web sites within the network.
(Select only one.)
- Strongly agree
- Agree
- Disagree
- Strongly disagree

Section 3
What are your priorities for using video clips in teaching and learning?
Rank the statements in order of importance to you when using video clips for teaching and learning. The most important factor would be ranked 1 and the least important ranked 6. Do not allocate the same number (in the columns) more than once.
26. Please rate the questions below in order of importance with one being the most important.

(Rank responses from 1 to 6.)
[ ] Visual quality of clip (resolution, definition and camera work)
[ ] Subtitles if video clip is in another language
[ ] Text information including diagrams and close ups
[ ] To reinforce and expand a student’s understanding of the content
[ ] As a reward for good conduct or good grades
[ ] To cater for different student learning styles

Section 4

27. How best to use video clip in the classroom / teaching activities?
(Select only one.)
☐ At the start or end of a teaching session (e.g. starter / plenary)
☐ At one main point in the teaching session as a long chunk
☐ Clips threaded throughout lessons at short intervals
☐ Revision purposes
☐ I don’t use video clips as part of my lesson
☐ Other, please specify:
Appendix E

Transcription of Focus group discussion

Focus group Interview

The purpose of this interview is to establish an understanding of the use of online video in a second level school. I would like to record this interview for transcription purposes only. The recordings will be erased after the transcribing has taken place. As with the questionnaire you undertook the transcriptions will remain confidential. Quotes may be taken from your interview and used in the discussion stage of the study. At no stage of the process will your identity be revealed, if a quote is used then no reference will be made to the source of the quote unless you provide written consent to do so. A coded system will be used at all times to identify quotes and participants and this coding will be revealed to any person.

This is a semi-structured interview. I have a series of questions that I would like to present to you, feel free to make a comment or expand on any issue should you feel the need to do so. Please do not hesitate to seek clarification on any point and be aware that you are not required to answer any question that you have difficulty with. Is there anything you wish to clarify before the interview begins?

SC  No

TC.  What use or value does you subject group place on the use of video clips in the classroom.
SC. Well, we feel that is huge potential for their use tin the classroom, we are very aware and seen video clips on YouTube and they cover the material in a far better way. They cover the material in different way than we would through the use of established methods of textbook and blackboard.

TC.  But have you actually used online video clips in the classroom
ND  No. We have not actually.
SC  I have never used then either.

TC Have you any video resources available to you within your subject area.
ND Well what we do have is a set of DVD’s that were produced commercially and they cover everything that is associated a house from planning through to foundations and on to completion. It consists of seven or eight videos and it cost something like one thousand euro when we bought it.

TC Are you pleased with the quality and content of material presented in the video?
MON “Initially I though that we had everything contained here within the set of DVD’s but now that we have it there are some areas that are simply inaccurate or at best out of date with current building regulations”

TC. What do you feel is the potential for video clips within your subject area.
SC Well, there is huge potential. You only have to go on toy YouTube and input a search for what ever you see in relation to the query and you will get a number of results coming back. Now, not all of these are good, in fact some are very inaccurate, but of the ones that are good there is huge potential for their deployment in our area.
TC: How best do you see clips being used in the classroom?

ND: Well, I suppose a great deal of what we teach is presented in form of diagrams and practical analogies. In this respect we could use the textbook and then supplement what we are covering with a video clip to reinforce the point or concept.

TC: Going back to the DVD resource that is available to you. How user friendly is it or how do you find it.

MON: Well, the first thing is that you have to load the disc and find your way to the relevant area. Once you find it I have no knowledge of how to save it for use in any other form other than the disc. So if I want to use it again I have to go through the same process, so it would be very handy if I could have the clips for use at a later stage as opposed to going through the whole process again.

SC: Another problem is that we only have one set of discs so one person can use them as a time, if we had them saved on the server then we could access them from any room at any stage.

TC: So have any of you actually downloaded a video clip.

ND: While I have not actually downloaded a video clip but I have viewed them on YouTube.

MON: You could spend your lifetime on YouTube watching videos, one better than the next. The problem is two fold really, the first lies in sourcing material that is relevant and the second is in how to download it and what you actually do with it once downloaded.

TC: Do you have any plan in place within your subject for the downloading video clips.

MON: No, I suppose we all agree that there is huge potential for using video clips but in reality thinking and doing is not the same thing. I would be great to have a selection saved for use on the school server but that would be the ideal situation.

TC: Does your subject association make any video clips available to you.

SC: No. As far as I am aware our subject association make any available to us. However, we did at one stage have a student teacher here for teaching practice and while he was here he used video clips to a large degree. He seemed to have hundreds of them. I did see him using them in class and the students were very impressed with them. In fact I was very impressed with them. The problem is that I don’t know where the disc went after he left.

TC: Would you be interested as a subject group in getting together with a view to compiling a bank of video clips that you could share with other teachers.

MON: I fully support the idea, I do realise that ultimately it would make my teacher life easier and possible more effective but I also appreciate the effort that is required to collecting and organising the resources.

TC: What was your opinion on the in-service provided with respect to downloading video clips.

ND: It was exactly what was need, the presentation itself was exceptional. The ability to add your own commentary to a video clip has huge potential for our subject area.

TC: Since the tutorial have any of you downloaded a video clip from the internet.

SC: I went home that evening and went onto YouTube and followed the instructions provided. In no time I managed to download five clips and subsequently used them in class. The reaction of the students was excellent and I liked the ability of being able to pause the clip and expand on a area of choosing.

MON: I see great potential for revision purposes. I downloaded two clips that related to material already covered in class and found it to be a most worthwhile exercise.

TC: Do you feel that you would benefit from additional in-service that focused on the issues of downloading video content.

SC: Yes, very much so. I would welcome in-service in how to use the software that was used to create the tutorials.

ND: I would be interested in that also.

MON: I really liked the idea of having your own colleagues as presenters. You are far more at ease with them and there is the added bonus on them being in the school should feel the need to refer to them for help or advice. This is totally dependant of course on the necessary skill base.
being available to planners in the first instant. It is an ideal situation and one that should be encouraged with huge benefits for all those concerned.

TC Gentlemen. Thank you for your time and participation
Appendix F

Interview with Irish Teacher

Interview 1
Irish Teacher

The purpose of this interview is to establish an understanding of the use of online video in a second level school. I would like to record this interview for transcription purposes only. The recordings will be erased after the transcribing has taken place. As with the questionnaire you undertook the transcriptions will remain confidential. Quotes may be taken from your interview and used in the discussion stage of the study. At no stage of the process will your identity be revealed, if a quote is used then no reference will be made to the source of the quote unless you provide written consent to do so. A coded system will be used at all times to identify quotes and participants and this coding will be revealed to any person.

This is a semi-structured interview. I have a series of questions that I would like to present to you, feel free to make a comment or expand on any issue should you feel the need to do so. Please do not hesitate to seek clarification on any point and be aware that you are not required to answer any question that you have difficulty with. Is there anything you wish to clarify before the interview begins?

TC: What subjects do you teach?
Maire: I teach, my main subject is Irish I have geography in my degree but I haven’t taught it for nearly 15 years.

TC: How many years have you been teaching?
Maire: I’ve been teaching now for 20 years.

TC: What levels of video based resources are available to you that might be relevant to your subject?
M: As far as I’m aware there is very little available in Irish

TC: Does your subject association provide any video clips for use in class?
M: No, there are resources available for use in class but none are video based.

TC: Do you use the resources available to you?
M: No.

TC: Do you feel that video clips add value to a classroom presentation?
M: Oh I feel they would, but unfortunately I’m not aware of any available certainly not within our school and not within any Irish teachers I would know.

TC: Have you ever downloaded any online video clips for use in the classroom?
Maire: I wouldn’t have a clue how to do it.
TC: What factors prevent you from using video clips?
M: I suppose the main one is not knowing how to do it, I would be very nervous about doing it and then trying to use it, I just wouldn’t know where to start.

TC: Would you be interested in being part of a video clip sharing group where videos relating to your subject were made available?
M: Oh I’d love to be part of it, I don’t know if I’d be any help to it, but I would certainly love to have, it would be very handy to have resources available that I could use in class.

TC: Are you satisfied with the IT equipment available to you?
M: Well yes, I have a computer and I was offered a projector but I don’t have any use for it so really all I have in class is a computer and a projector, I really only use that to access past examination papers.

TC: Do you feel that you make the best use of these resources?
M: Well, in terms of the computer resources available no I don’t. I suppose I’m still teaching the way I did twenty years ago, and the fact that a computer has come in hasn’t really impacted on my teaching.

TC: Did you find the tutorial on video capture was useful?
M: I found it really useful, I didn’t realise it was so easy to do. It’s in fact, its very easy, very pleased with the tutorial.

TC: What element did you find most useful?
M: The whole thing really, I just didn’t realise how simple it is to do, I suppose what confused me is all the talk of file formats and all that, I couldn’t get my head around that at all, but certainly the video that was presented made it look very easy.

TC: Have you downloaded any videos since you had the in-service?
M: I did, I tried to download one and it worked unfortunately it had nothing to do with my subject in school but I did go home and follow the instructions I was given and I was able to download the video, now I don’t know what ill do with it, but certainly I was able to download the video.

TC: What reaction did you get from the students?
M: I didn’t get a reaction because I didn’t show it to them I just downloaded it for myself.

TC: Is it your intention to use video clips in future lessons?
M: It would be certainly if I felt there was material available I’m sure there is material available I just haven’t gone to look for it.

TC: What is your view of YouTube being blocked in schools?
M: I didn’t know it was blocked actually, I don’t know much about it. I don’t know if there’s anything on YouTube suitable for my subject. I do know the kids would spend a lot of time on it if it was available so I don’t know if it’s a good or bad thing.
Appendix G
Interview with History

Interview 2
History Teacher

The purpose of this interview is to establish an understanding of the use of online video in a second level school. I would like to record this interview for transcription purposes only. The recordings will be erased after the transcribing has taken place. As with the questionnaire you undertook the transcriptions will remain confidential. Quotes may be taken from your interview and used in the discussion stage of the study. At no stage of the process will your identity be revealed, if a quote is used then no reference will be made to the source of the quote unless you provide written consent to do so. A coded system will be used at all times to identify quotes and participants and this coding will be revealed to any person.

This is a semi-structured interview. I have a series of questions that I would like to present to you, feel free to make a comment or expand on any issue should you feel the need to do so. Please do not hesitate to seek clarification on any point and be aware that you are not required to answer any question that you have difficulty with. Is there anything you wish to clarify before the interview begins?

TC: What subjects do you teach?
SOB: I teach, my main subject is history and I also teach some religion but primarily history.

TC: How many years have you been teaching?
SOB: I’ve been teaching 10 years.

TC: What levels of video based resources are available to you that might be relevant to your subject?
SOB: There’s a huge, huge range of material available for history in fact the difficulty you would have is deciding what to use.

TC: Does your subject association provide any video clips for use in class?
SOB: Officially no they don’t. Unofficially they would be some clips being passed around but there is no official effort to distribute them.

TC: Do you use the resources available to you?
SOB: Oh I would use every resource available, a huge part of my class is based on video I would have. I have assembled quite a number of videos at this stage covering different topics and I would use them especially with senior classes.

TC: Do you feel that video clips add value to a classroom presentation?
SOB: Oh very much so particularly with senior classes, you can be talking about a moment in history and then you could show a video clip and you can actually see the footage. It could be something that happened, a moment in history, or a place but certainly, for example the industrial revolution is very well covered.

TC: What factors prevent you from using video clips?
SOB: Personally, there is no factor really, I use it. I suppose I have all the resources, I do have to put a lot of time into it, I accept that. Once I have it done, then I build up quite a lot of material so there’s nothing really stops me from using it.
TC: Do you find using video clips benefits the students more than a normal class?
SOB: Oh very much so, at this stage now my students expect me to use video, it’s become part of my class and they don’t see it as being anything different.

TC: Would you be interested in being part of a video clip sharing group where videos relating to your subject were made available?
SOB: Oh, I would. At this stage now, I suppose over the last three years I would have assembled maybe three or four hundred video clips. I suppose that material is on my hard drive; it is a pity it’s not shared with other people. The biggest problem that I find with getting video clips is finding something that is relevant, and at this stage now I have assembled quiet a lot of material that is relevant and I think it would be very good to have it shared on an organised fashion, I would love to have some more material coming from people of similar mind.

TC: Are you satisfied with the IT equipment available to you?
SOB: Very much so, we have the latest of equipment, we have projectors and videos. I have a fully equipped room with surround sound speakers everything’s available to me.

TC: Do you feel that you make the best use of these resources?
SOB: Oh I do, in fact I couldn’t I imagine my teaching taking place without them. I suppose the amount of time that I actually use the blackboard now is minimal, its all even my lessons are presented on the projector.

TC: Did you find the tutorial on video capture was useful?
SOB: I did find it useful, most of the material that was presented I was already aware of so certainly I didn’t get a huge amount from it but I was watching those around me and they were totally engrossed with it, and hopefully it will give them the interest to download videos and use them in their classroom.

TC: What element did you find most useful?
SOB: What I found most useful was the fact that an effort was made to do something within the school. Up until now anyone who has been using video in class, it has been more or less at their own initiative but this is the first effort by the school to target the use of online video clips in class and at least now were discussing it and as a consequence of that you might find that you can help somebody, or get help in the staffroom as you discuss what’s available.

TC: Have you downloaded any videos since you had the in-service?
SOB: Well I would have downloaded videos before the in-service, so I suppose my teaching pattern hasn’t changed any. I am aware of other people within my history department who have embraced technology and they are now actually coming and asking me questions about it. They’re starting to share material I have and even one of them now did come across a clip they downloaded that I wasn’t aware of and I have used. So in a sense while the tutorial wasn’t of immediate benefit to me it has served me in that a colleague has started to use material that I have found useful.

TC: Is it your intention to use video clips in future lessons?
SOB: Oh it is my intention to continue to use them and to expand on the use of video clips. I suppose as a direct consequence of the tutorial I am now setting out to within my department to create a repository of material that all the history teachers can call upon and I’m making my material available to the others and were going to put it up on the school server so you can call it up at any stage you want.

TC: What is your view of YouTube being blocked in schools?
SOB: Oh, I’m totally against it. I am aware that there are issues with content that’s not suitable but I don’t think you should restrict something just because there is something bad there in it, were talking about the potential to misuse something and I think that type of censorship immediately rules out the positive features just to negate the negative ones.

TC: Have you ever had any official training in the use of video in a classroom?
SOB: During my teacher training, video was only coming out so we would have looked at that in college. I haven’t had any official training in it, any training I would have had in it, or any experience I would have had would be from personal training myself, I haven’t had any official training.

TC: Would you like to have official training in it?
SOB: Oh I think its terribly important, video clips are something that are here, we cant deny it and really it needs to be addressed and it needs to be addressed countrywide not just in this school. I think what we have done in this school here should be mirrored in every school in the country.

TC: So getting back to the use of video, do you think video clips have a positive role to play in education?
SOB: They have a very positive role to play in education I know if video clips are used properly then I don’t see any negative side to them at all, it can only be positive.
Appendix H
Interview with Science teacher

Interview 3
Science Teacher

The purpose of this interview is to establish an understanding of the use of online video in a second level school.
I would like to record this interview for transcription purposes only. The recordings will be erased after the transcribing has taken place. As with the questionnaire you undertook the transcriptions will remain confidential. Quotes may be taken from your interview and used in the discussion stage of the study. At no stage of the process will your identity be revealed, if a quote is used then no reference will be made to the source of the quote unless you provide written consent to do so. A coded system will be used at all times to identify quotes and participants and this coding will be revealed to any person.
This is a semi-structured interview. I have a series of questions that I would like to present to you, feel free to make a comment or expand on any issue should you feel the need to do so. Please do not hesitate to seek clarification on any point and be aware that you are not required to answer any question that you have difficulty with. Is there anything you wish to clarify before the interview begins?

TC: What subjects do you teach?
BD: At junior level I teach science, and at senior level I teach physics and a single chemistry class, but it’s primarily physics.

TC: How many years have you been teaching?
BD: I’ve been teaching 26 years.

TC: What levels of video based resources are available to you that might be relevant to your subject?
BD: Well within the physics, in fact within all the sciences, there’s a huge range of material available on the internet, huge range.

TC: Does your subject association provide any video clips for use in class?
BD: Yes, yes there starting to emerge. Unfortunately teachers have them in an isolated manner, teachers would download, but they wouldn’t actually present some to us. I am aware that there are video clips being used but we haven’t officially got any.

TC: Do you use the resources available to you?
BD: Not as much as I would like to, there are some. The video clips would come with sample books but the problem is that keeping them and finding them when you want them, but yes there are some there, and I would make use of them.

TC: Do you feel that video clips add value to a classroom presentation?
BD: Oh I would think they do, there very useful. There’s a lot of experiments that I would be doing with the class and I suppose because I am at the front of the class they would have difficulty in seeing them but now you can actually present theses experiments on the screen and its most beneficial to students.

TC: Have you ever downloaded any online video clips for use in the classroom?
BD: Personally, no I haven’t. I have used video clips from CD’s ok, but Ive never personally downloaded one to use.

TC: What factors prevent you from using video clips?
BD: On a personal nature I suppose not knowing how to do it would be the main factor. I suppose lack of time would be another factor in that I just don’t have the time and I don’t know where I would get the time to do it. I see the young teacher trainers, the dips, coming in and they have a huge range of material alright but certainly I don’t know where they get the time or the enthusiasm to do it.

TC: Would you like to be able to use video clips in the classroom?
BD: Oh I would, I would love to be able to use them, I would love to have them available to use.

TC: Would you be interested in being part of a video clip sharing group where videos relating to your subject were made available?
BD: Oh, that’s a great idea, I think that would be very useful if there was a single repository of material and then if each person did a few clips then we could share them.

TC: Are you satisfied with the IT equipment available to you?
BD: Oh very much so, we have the latest, I have a projector computer and the projectors mounted on the screen and there’s a pull down screen. The equipment I have is second to none.

TC: Do you feel that you make the best use of theses resources?
BD: I suppose if it was a bit more organised I could make better use of them, I do make use of them but I suppose I could always make better use of them.

TC: Did you find the tutorial on video capture was useful?
BD: I found it really useful, I didn’t realise it was so easy to do, it’s not half as complicated as I though it was. I found it very informative.

TC: What element did you find most useful?
BD: I found the tutorial where he was able to capture the videos by pressing a button of fire fox, that was so easy to do, I found that very easy.

TC: Have you downloaded any videos since you had the in-service?
BD: Yes, I’m delighted to say that I went home, I sourced some material on YouTube, I followed the set of instructions I was given and I was able to download quite a number of clips.

TC: Did you use them in classroom?
BD: Yes, I have used them in the classroom and it went down very, very well no problems at all, in fact it was a painless process.

TC: What reaction did you get from the students?
BD: I got a huge reaction from the students. I’m sure they were wondering what happened to me. I introduced the lesson that I was going to do, then I played the short video clip that I had captured then at the end we discussed it was a magnify class it went really, really well. It engaged the students, they talked about what they saw, it was really good.

TC: Did you think the students benefited more from watching the video than they would have in a normal classroom day?
BD: Very much so, even though the clip was only 4-5 minutes long they were totally engaged with it and the very useful thing was that I could replay it and discuss different parts of the video it was really, really handy.

TC: Is it your intention to use video clips in future lessons?
BD: It is my intention to use them, it is indeed.

TC: What is your view of YouTube being blocked in schools?
BD: I would be against it in principle because there is a huge amount of very useful content available but I do accept that there is also content that is not acceptable so it's really trying to strike a balance between what is good and harmful.

TC: Have you ever had any official training in the use of video in a classroom?
BD: Never, no I have been to a lot of science in-service and never have they addressed the issue of video downloading.

TC: Would you like to have official training in it?
BD: Oh I would indeed, now that I have done a small bit in it, I realise the potential there. I realise how easy it is. I would welcome more in-service on it.

TC: Do you share resources within your department in school?
BD: We do share them but not on a structured level. I will borrow something from someone else when I need it but we have never sat down and consciously decided that we would produce material that all of us would share.

TC: So getting back to the use of video, do you think video clips have a positive role to play in education?
BD: They have a hugely positive role to play, I can't really speak for other subjects but certainly within science and within the discipline I teach there's huge potential for its use.