How can Student Interactivity be Enhanced through the use of a Blended Learning Approach?

Mark Callagher
Ministry of Education
E-Learning Fellow
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This research explores how student interactivity can be enhanced through the use of a blended learning approach. It seeks to discover how students can become more engaged in their learning when offered an environment that encourages interaction and collaboration.

I taught a Year 11 high school History class using the open source Moodle Learning Management System. Students engaged in a range of online activities from home including participating in online discussion forums to prepare themselves for upcoming lessons which sought to further engage them with meaningful learning experiences.

This research investigated how student interactions with the content, the teacher and other students have helped to increase their overall engagement. It finds that their experience of blended learning led not only to increased engagement but also to an equalisation of participation, particularly for lower ability students. A key part of the exploration was how the use of online discussion forums promoted higher order and self reflective thinking along with dialogue between students.

The research concludes with a discussion of how incoming technologies such as Collaboration Webs and Mobile Tools will enable a further and more natural blending of the face to face and online learning environments.
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Mark Callagher
2008 E-Learning Fellow
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BACKGROUND TO THE RESEARCH PROJECT

I have been teaching at Wellington College since 1994 mostly in the subject of Mathematics. Over recent years I have gradually taught more History which is my degree major. Since the Ministry of Education provided laptops to teachers in 2003 my uptake of ICT’s with my teaching programmes has been rapid to the extent where I was drafted into teaching Computer Studies. I began teaching History with PowerPoints, email and the internet to both digitalise my class presentations and to provide for a communication channel between myself and my students. However, in doing so I felt that while there had been a huge improvement in the quality and presentation of content, there was also the potential and need for more engagement and interaction. I then sought to find a means to use the power of emerging internet tools to help provide a more interactive and better balanced learning programme. I soon discovered the power of the emerging trend in secondary schools of Learning Management Systems (LMS’s), also referred to as Virtual Learning Environments (VLE’s), to help engage students more with the content and also to hopefully increase the level of discussion within the class. It became evident that one LMS in particular stood out from the rest and that was Moodle. In 2006 I first trialled a blended learning approach using the Moodle LMS with a Year 11 History class. This was a real learning curve for everyone involved. By year’s end student feedback was overwhelmingly positive towards this approach and I instinctively knew that there were some very encouraging learning experiences occurring both online and in the classroom. I felt the need to explore in more depth the worth of this blended style of teaching and learning.

THE RESEARCH QUESTION

How can student interactivity be enhanced through the use of a blended learning approach?

This research is focused on a New Zealand Year 11 History class of boys (approximately 15 year old age group) and how a blended learning approach using an online Learning Management System can be used to improve student learning through increased engagement and interactivity both online and in the classroom. I consider this to be an important study because blended learning is a relatively new phenomenon in Secondary Education, with my literature review exposing that the vast majority of research on blended learning has been focussed on the tertiary education sector.
WHAT IS A BLENDED LEARNING MODEL?

To one person ‘blended learning’ can mean the blending of a combination of pedagogical approaches with no regard to ICT while for another it can mean the blending of any simple technology such as the use of video in a face-to-face classroom (Driscoll, 2002). More recently it has come to be defined by the ‘delivery’ of learning using a combination of face to face and online learning methods, as shown in the diagram below (Heinze and Proctor, 2004). With the focus on delivery modes, the question has then come down to what amount of online learning should be used (Chen and Looi, 2007) or what percentage should be taught online for it to constitute blended learning (Dziuban, Harman & Moskal, 2004)?

![Conception of Blended Learning](Diagrame: Heinze and Proctor, 2004)

Others, preferring not to discuss blended learning purely in terms of a ratio of modes of delivery, add that it must also include a mixing of different learning theories and pedagogies (Dziuban, Harman & Moskal, 2004; Oliver & Trigwell, 2005; Heinz & Procter, 2004). It has been suggested that the term ‘blended learning’ should possibly be abandoned altogether or at least be redefined so that ‘learning’ is at the centre of the meaning rather than ‘modes of delivery’ (Oliver, 2005).

More recently, the term blended learning has come to be redefined as face-to-face educators have sought to add flexibility to their courses as new online technologies have evolved
Blended learning is very new to Secondary Schooling so I would prefer to define it in the context of the ‘purpose’ of introducing the newly available online technologies into a purely face-to-face environment. In this study I will define Blended Learning as the introduction of the best of online learning tools and strategies into a face-to-face learning environment with an emphasis on engagement through increased participation and interaction. In terms of the online environment, it offers the convenience of online content and interactions which can occur at anytime or in any place. Blended learning should therefore provide a more vigorous learning experience for students which could not be achieved through a fully face-to-face environment.

**WHAT IS INTERACTIVITY?**

To interact, as defined by the Oxford Dictionary, is a verb meaning to *act so as to have a reciprocal effect*. In computer terms interactive refers to a two-way flow of information between the computer and the user. This second meaning is very basic and to be expected in all spheres of computer use these days anyhow.

In educational theory interactivity has been defined more broadly as *communication, participation and feedback* (Muirhead, 1999) or as *an interplay and exchange in which individuals and groups influence each other* (Roblyer & Ekhaml, 2000). Another way to define interactive learning is to consider its opposite which is passive learning. Passive learning is considered by many to be sitting in a classroom and listening to a lecturer. Once the lecturer opens the floor up for questions and answers then there is a move from passivity into interactivity between the lecturer and the students. This teacher-student interaction can be considered as one “kind” of interaction. It is considered important to clearly identify the ‘kinds of interactions’ that occur before any research can progress e-learning design and development in a meaningful way (Bannan-Ritland, 2002).

**WHAT KINDS OF INTERACTIONS OCCUR?**

Garrison and Anderson (2003) believe that interactions are the most critical feature of the formal education process. They define *all forms of education as interactions among teachers, students, and content*. They produce six identifiable interactions as those between:

i. Teacher-Student
As this project is about “student interactivity” the focus will be on the first three of these kinds of interactions: teacher-student, student-student and student-content. These are the three essential kinds of interactions identified by Moore (1989) and are also considered the essential three codifiers for analysis of interactions within ‘online asynchronous discussions’ (Dawson, 2006) which I will later discuss as the potentially key ingredient in blended learning.

WHY IS INTERACTIVITY IMPORTANT?

The New Zealand Ministry of Education recognises the importance of interactions in learning for students to develop into competent contributors to society (Ministry of Education, 2006). It has been a long accepted idea that student learning experiences are far more significant when they are active, interactive and reflective (Payne, 2007). Some believe that student interactions are an essential condition for learning and that those interactions contribute to deeper learning and more meaning as new information is presented (Ally, 2004, Mayes, 2006). The increase in student learning through interactions can be measured by increased engagement, assessment performance and student satisfaction (Zirkin & Sumler, 1995; Mishra & Juway, 2006).

What started out as an attempt at social presence in purely distance education, particularly through the use of asynchronous forums, has evolved into a perceived necessity for enhancing blended learning (Anderson, 2005). The need for high levels of interactivity is now seen as an essential element of the effective integration of ICT’s into a face to face learning environment. These ICT’s can also create new learning possibilities by expanding student interactions to include more diverse and global communities (MCEETYA, 2005).
BLENDED LEARNING AND INTERACTIVITY

The concept of blended learning is relatively new to secondary education so I will rely on research gathered from the tertiary sector. Much of this research suggests that blended learning leads to an increase in all types of interactions along with increasing overall student satisfaction (Chen & Looi, 2007; Dziuban, Hartman & Moskal, 2004; Rossett, 2003). Courses become more innovative, flexible and encourage engagement and collaboration (Weaver, Spratt & Nair, 2008). Educators also report increased interactions and engagement in the classroom (Wingard, 2004). Research also shows that students become far more active in their own learning, feeling more technologically empowered and able to learn in an anywhere and anytime manner which suits their lifestyle (Bender, 2003). In particular students have access to a wider range of outside resources which has proven to increase what they actually learn (Dziuban, Hartman & Moskal, 2004; Rossett, 2003; Bender 2003) along with elevating faculties’ expectations of student performance (Wingard, 2004).

The argument that interactivity is enhanced in a blended learning environment I will leave to Weaver, Spratt and Nair (2008) who, having researched the implications for quality when using a learning management system, claimed that

."the appropriation of technology for teaching suggests great opportunities for the promotion of innovative and interactive quality e-learning environments..."

and that

."such pedagogies aim to encourage learners to become autonomous lifelong learners, capable of problem solving and critical thinking, and to move them from being passive recipients of information and knowledge to being active, enthusiastic learners and knowledge creators.

ONLINE FORUM DISCUSSIONS AND INTERACTIVITY

Bender (2003) suggests that for a thorough acquisition of knowledge, it is vital to have discussion about topics learned. Much of the research now suggests that online discussion forums are an essential component of effective course design (Payne, 2007). While early adopters used threaded discussion as an add-in, it has proven far more successful when properly integrated, that is by making discussion topics more relevant to the course content (Payne, 2007; Mishra & Juway, 2006). The benefit of online discussion in blended learning courses, at a minimum, allows topics to be discussed over longer time periods and without
the time constraints of face-to-face class time (Frazee, 2003). There is plenty of research to suggest that online discussion encourages and facilitates highly interactive and collaborative learning environments (Chen & Looi, 2007).

One of the agreed benefits of online discussion forums is that it encourages and equalises student participation (Chen & Looi, 2007). Students can feel more comfortable sharing comments in this format which they perceive to be less threatening than an intimidating face-to-face environment (Ng & Cheung, 2007; Frazee, 2003). Shy and less vocal students felt strongly that there was more opportunity to share their opinions without being interrupted by dominant students (Ng & Cheung, 2007; Bender, 2003).

Another benefit is that online discussion forums enable more diverse views and helps students to participate in the construction of knowledge. Students can put their thoughts into writing in a way that others can understand, promoting self reflective dialogue and dialogue with others (Chen & Looi, 2007). When students participate in online discussions they are exposed to a broader range of views allowing them to develop more diverse perspectives and to collaborate in the construction of new meaning.

Online discussion also promotes higher order and reflective thinking as students’ process information (Chen & Looi, 2007; Rovai & Hope, 2004). The anytime aspect of online discussion allows learners to have time to think deeper about a topic and respond when they feel more informed or inspired (Bender, 2003). The discussion is a permanent record which allows continued reflection and debate, rather than being lost in the rush from one face-to-face class to another (Chen & Looi, 2007).

Another impact of online discussion forums is the blending of the two learning environments to enhance in class interactions. You can introduce an interesting online discussion into the face-to-face environment and, vice versa, continue an interesting class discussion online – the blending of the two environments becomes an inherent part of the students’ learning experience (Bender, 2003; Ellis, Steed & Applebee, 2006).
Finally, online discussion gives valuable feedback for teachers to help improve learning. In our striving to involve and immerse our students in their learning we get valuable online feedback when their comments are frequent and involved, as well as being deep, thoughtful, insightful, and excited (Bender, 2003). We get to know our students better and gain a superior understanding of their thought process. This allows us to refine our course material and discussions for future courses (Frazee, 2003; Bender, 2003).

SETTING UP THE RESEARCH PROJECT

The research clearly suggests that there are real benefits to student learning when a blended learning model is successfully implemented. My next step was to set up a realistic test situation where I could gather valid data to analyse these benefits. I decided to implement a teaching unit with a class of Secondary School students who had not experienced using a blended learning environment. I chose to teach the unit myself as I felt that the project needed the drive of someone already familiar with using blended learning and the associated online tools and who had the required motivation for this type of learning to succeed. I chose to complete the research project at my own school as I was already familiar with its ethos and environment.
THE PARTicipating SCHOOL

Wellington College is a Decile 10 State College for boys. The College, founded in 1867, has a lot of tradition and history. Unlike most traditional New Zealand boys' schools, Wellington College offers a wide range of sports and cultural activities in which its students typically excel. Students are also encouraged to excel academically with the College performing very highly in national examinations. The College has a role of approximately 1500 students with a diverse range of cultures. A more detailed overview of Wellington College can be gained via the official school website: http://www.wellington-college.school.nz

The History Department

The Wellington College History Department is, unlike most New Zealand schools, stand alone rather than coming under the Social Sciences Department. History at Wellington College is offered at all levels. At Year 9 entry level, students are required to take a language plus either History or Latin. The number taking History in Year 11 is normally 5 classes or approximately 110 students (roughly 35% of all Year 11 students) in total.

Starting in 2002 the History Department had organised a number of bi-annual 3 week History and French study field trips to the World War I battlefields in northern France and Gallipoli (Turkey). This has included visits to grave sites of former students who died fighting in World War I.

The Year 11 History Course

Year 11 History is built around 20th Century content and is assessed under an NCEA skills-based framework.

The skills assessed are:

- Carry out an historical investigation (internal)
- Communicate historical ideas (internal)
- Interpret historical sources (external)
- Describe the perspectives and related actions of people in an historical setting
- Describe an historical development, in an essay
Describe experiences that have been significant to the identity of New Zealanders

The Wellington College Year 11 course covers the following content. Note that this is the order that the research class completed through 2009:

- New Zealand’s Search for Security, 1945-1985
- Origins of World War II, 1919-1941
- Conflict in Ireland, 1909-1922
- Conflict in Palestine/Israel, 1935-1967

The research topic, Origins of World War II (WW2), was therefore a quarter of the year’s content and taught over a 7 week period – 3 weeks before the April Holiday break and 4 weeks after. Directly after the teaching of the topic the students spent 3 weeks with their regular teacher researching and completing their internally assessed component. During this time I gathered further data for analysis directly from the students and the class teacher.

The NCEA assessments for this topic (WW2) were external and comprised of just the two components, the perspectives and essay questions.
WHY I CHOSE THE MOODLE LEARNING MANAGEMENT SYSTEM

I had completed a rigorous investigation into different Learning Management Systems in 2006. I kept coming back to Moodle (acronym for Modular Object Oriented Dynamic Learning Environment) as a preferred option. Although Moodle is free to download and use, it does require some degree of technical expertise to configure and update the software. For this reason I initially decided on a managed hosting solution so that I could focus on pedagogy rather than technical issues. Another advantage with Moodle is that it has a large community of users and developers which is growing at a rapid rate.

My choice of Moodle was not only that it provided the tools for what I wanted to achieve but it was also relatively easy to implement. Here are the key reasons why Moodle met my requirements:

1. I could easily organise the course content to my liking. Rather than a lot of folders I could place document links, web links and course activities on the front page in an ordered and easy to follow approach. Another benefit is that I could conveniently hide or reveal content already placed in the front page of the course site. Moodle gave me the flexibility to make the front page of the course site look more appealing to my target audience of Secondary School students with the addition of images, the modifying of font and text size and colour and the embedding of other objects.

2. The highly interactive nature of Moodle was another feature which helped with my decision. The Forum and Glossary activities were two which I chose to use mainly. There were a number of other features within Moodle that could be used and more could also be added from the large Moodle development community.

3. Moodle is highly intuitive for both the course creator and the end user. It took me little time to learn how to utilise the various functions and to upload content. Student feedback has been that Moodle was easy to learn how to navigate and use. This was an important consideration as I only had 7 weeks to complete the research project and I did not want to deal with ongoing confusion over the LMS.

4. One thing that stood out with Moodle was its robustness. It has always proven difficult to break anything from the course creator side which has encouraged me to
trial and experiment with its many different features. Students also found it difficult to break anything on the course site.

ABOUT MOODLE

The screenshot above shows a standard empty course shell with no content or activities added. The following screenshot of the Origins of World War II course gives some idea of how a course creator can make their course more appealing with a different Moodle Theme (sometimes known as a skin) and a range of content and activities.
SCREENSHOT OF THE ORIGINS OF WORLD WAR II COURSE HOMEPAGE
ACTIVITIES AND RESOURCES USED

The Moodle tools that were used in the 7 week course were:

- Forum
- Student Glossary
- Chat Room
- Messaging
- Assignment upload
- Calendar – Upcoming course events schedule

Resources that were either uploaded or linked to in the 7 week course were:

- Online Textbook (SCORM)
- Timelines
- Quiz – Hot Potatoes
- Links to online resources such as:
  - Online books
  - Podcasts
  - Interactive maps
  - Related websites
  - Primary resources
- Student Notes (Microsoft Word Document Format)
- Video links (accessed via YouTube)
- Embedded Wikipedia search engine
- Revision Activities such as:
  - Fling the Teacher (Quiz)
  - Topic overview diagram (PowerPoint)
  - Matching Terms (Quiz)
  - Timeline Revision (Quiz)
  - Course Revision Podcasts
THE TOPIC – ORIGINS OF WORLD WAR II

The “Origins of World War II” topic is probably the most popular and widely known of the Year 11 History topics. Many parents and grandparents of students would remember being taught this topic at school. The topic content has changed little in decades, despite the continued evolution of historical analysis and opinion. Student texts have changed little over the years leading to the retelling of the same story which has remained relatively unchallenged. One of the benefits of preparing this course for online use has been the exposure and use of the many new and diverse sources of information. This will be discussed more fully later.

THE TEACHING MODEL – WITH MOODLE TOOLS

Having created and used most of the content for the Origins of World War II course in the previous year, I decided to design it in a similar manner with a few modifications and enhancements. The essence of the model was that students would come to class prepared. They were to do most of the online work at home (up to 4 hours per week) by participating in some online activities as preparation for upcoming classes. The reasoning behind this preparation model was so that when students arrived in class they would be better informed and able to participate in more meaningful class-based activities. In addition, class time usually “squandered” on getting content across to students through textbook reading, copying notes or watching videos could be better utilised.
The homework preparation involved their reading an online textbook seen above as “Chapter 11 – The Czechoslovakia Crisis”. Students found these readings easy to navigate, read and comprehend. The reading could be reinforced by some optional video (embedded into the course from YouTube). Students were then required to complete a series of quizzes. Each quiz gave instant feedback and required correction of answers before moving onto later quiz sections. Many students took up the option of repeating different quiz sections to help improve their overall scores. While doing the quiz students often went back to the online textbook to revisit the information. The quiz results were available to me to monitor course activity completion. This combination of reading plus quiz helped the students to comprehend some quite detailed content. Students could also download a set of notes in Microsoft Word format and were encouraged to personalise them by adding extra information or images.

Students were always offered “Additional Resources” (below the horizontal line in the lesson screen-shot) if they wanted to explore further. Some of these additional resources were occasionally used in classroom lessons.

USING ONLINE FORUM DISCUSSIONS

My objective was to make the Moodle forum discussion tool the focal point of the online learning environment. For this reason I had to carefully manage its introduction to the students. I decided to do this on the first day with an interesting and non-threatening in class activity. While students were being familiarised with the course site in a computer suite they were instructed to go into a forum discussion and simply state “What they already knew” about the topic and “what they wanted to know”. I often use this task in a normal class setting but thought it a good way to introduce students to the forums.
As you can see from the above examples there was already a body of knowledge that the students had and were willing to share with each other. During the activity students were clearly reading what others had written so that they could add something different.

During the second week, once students had become used to the homework routine, I reintroduced them to the forum tool. This time, after they had completed the required activities for a lesson, they were encouraged to contribute to an online discussion asking them to form an opinion about a topic. See the discussion forum instruction screen-shot related to “The Czechoslovakia Crisis” below.
AN EXAMPLE OF THE START OF AN ONLINE FORUM – RELATED TO THE PREVIOUS LESSON SEGMENT

During the initial forums I answered or commented on all of the student entries as I felt that they needed to know that someone was taking the time to read their comments. However, to encourage student interactions I told them that I was going to withdraw my involvement and that they should start replying to each other. An analysis of how the forum discussions progressed is discussed in more detail at a later stage.

THE PURPOSE OF THIS MODEL

It should be made clear from the outset that the model I chose was not intended to ready students for assessment examinations. It was instead to engage them with meaningful interactions so as to improve the depth of their content knowledge, without which they cannot perform at assessment time in any case. However, it was quite reasonable to assume that increased interactivity and engagement would have an inevitable positive impact on each student’s historical thinking skills.

Historical thinking skills are a set of reasoning skills that students should learn as a result of studying history. The United States National Center for History in the Schools defines historical thinking in five parts:

- Chronological Thinking
- Historical Comprehension
- Historical Analysis and Interpretation
- Historical Research Capabilities
- Historical Issues-Analysis and Decision-Making

Though Chronological Thinking is a lower level skill it is identified as the heart of historical reasoning. Without this knowledge of when events occurred or in what order there is no
possibility to examine relationships between the events or historical causes. The higher level skills in the American Schools programme develop from the core knowledge of recall and sequencing of events.

The teaching model which I trialled was intended to engage students in chronological thinking and sequencing and also to raise them to the point of a deeper level of understanding of historical issues and historical decision-making. This skill, at a higher level than the others, is where a student could assess and question decisions that were made in history. The students should then gain good comprehension of the decision-making process that occurred around important historical events, and then hopefully form and argue their own opinions.
THE TEACHING EXPERIENCE

PREPARING THE CLASS

The class of 28 students was informed that they would be taking part in the research project from the start of the year by their History teacher and Head of Department, Gregor Fountain. They proceeded through their first topic, New Zealand’s Post World War II Search for Security. I visited the class 2 weeks before the start of the research project teaching unit and discussed what they would need to do to participate. (see Appendix 4).

The priority at this stage was to get permission from students and parents for their participation in the project. I also needed to prepare the students for access to computers and broadband internet facilities. I was not surprised to find that all but one student had a computer at home and roughly 90% of the students could access broadband internet from home. Access did become an issue for a handful of students though this was overcome with the availability of high speed internet facilities in the College library before, during and after school hours.

DIFFICULTIES WITH TEACHING THE UNIT

I had the advantage of having taught at the College for a number of years and were known to the students, some whom I had taught Mathematics to the previous year. Despite this it felt unusual teaching the unit to a class that was not my own. I had to overcome the initial feeling of being a “substitute teacher” and student perceptions that this new online learning was a bit of a novelty and only a temporary arrangement. Another disadvantage was that I was restricted to a 7 week time-frame with the class. This included time to prepare them for online learning and to fully cover all the topic content.

There were initial problems with such an abrupt change to the students’ routine. They had not received much in the way of regular homework and some were reluctant to do any. There was also the need to encourage the students to go online at home. This change of routine took the first three weeks, prior to the April School Holidays, to successfully implement. I also had to address students’ technical issues such as the need to download the
latest version of Adobe Flash Player. The four week teaching period after the April Holidays seemed to go much better. By now students had become used to the routine with most having caught up with missed online content over the holidays. I will also mention here that one student went on an overseas family holiday to Europe for the April Holidays plus the first two weeks of Term Two. He managed to complete all readings and quizzes while overseas. The advantage of having the coursework online where students could access it from anywhere and at anytime had already proven beneficial.

The issues that I faced with this class had been addressed more smoothly the previous year when I had taught my own Year 11 History class for the entire course. In 2007 I had started the students on day 1 with photos and passwords and spent two orientation days in the computer room familiarising them with the website. The students had initially responded more positively as they knew it was the way things would be done for the whole year. I then only had to focus on technical issues and a couple of students who refused to do homework not only for History but for most subjects.

RESOURCING ISSUES

One of the biggest issues which will face teachers and schools in the next few years is that of resourcing the online component of blended learning. The majority of educational publishers have simply converted their print texts to digital portable document format (PDF) and claimed this to be suitable resourcing for online learning. Quite frankly most of what is produced is rubbish. Students will not stare at screens of text for endless hours. The internet generation scan what is on the screen and decide very quickly whether or not they are going to close the window and go elsewhere. I wanted to give my students a better experience of online content. I wanted the online environment to be a home for the students where everything was accessible. I felt that if I stuck to using the regular class textbook then the students would feel less inclined to go online. For this reason I made the early decision that all content could only be accessed via the website. This full immersion approach had proven successful in the past. Another favourable factor is that most of our current students are digital natives and already spending large chunks of time online in a social context.
Because I had made the decision to provide everything online I then had to prepare all of the content. I wrote my own digital textbook using a number of sources. When writing the chapters I decided on these principles:

- Chunking into small amounts of text
- Lots of interesting images, maps etc
- Multimedia content if available – embedding of animated content and sound files
- An easy navigation system


As I went through the process of writing the content it became obvious that there were issues of copyrighted content, particularly images, that I was accessing. This copyright issue will need to be addressed better in coming years if we are to take advantage of the wealth of web content and putting it into an online format that appeals to our students.
INTRODUCTION

This investigation was about enhancing student interactivity in a blended learning environment. As previously indicated the three essential kinds of interactions investigated were student-content, student-teacher and student-student. I looked at interactions primarily in the online environment focusing mostly on the threaded forum discussions and the level of engagement and interactivity therein. Another emphasis was the level of student interaction with the online content as this has already been discussed as one of the huge benefits of moving students, and the teacher, online. In the class environment I took some snapshots of lessons and looked at how the online environment impacted upon classroom interaction and engagement.

METHODS OF COLLECTING DATA

Data collection came from a variety of sources.

The Moodle LMS administration tools gave me access to valuable data concerning student participation and engagement with the course content. The forum discussion archive provided valuable data with its very accurate record of student interactions.

I also used video and audio recordings of four class sessions over the 7 week unit. These provided a good snapshot of student engagement and interactions in the face-to-face learning environment.

After the unit had been taught I gathered data from three other sources. The first of these was a student questionnaire completed by all of the students involved (see Appendix 1). I followed this up with a student focus group interview compromising of six students representative of a range of participation and ability levels within the class. These students were questioned in more detail about their experience of blended learning. Finally, I interviewed the regular class teacher who was present during most of the teaching unit and also participated online as a non-editing teacher.
A more detailed explanation of data collection methods is included in Tables 1 and 2 (see Appendix 5).

DATA ANALYSIS

In analysing the data I used a mixture of quantitative and qualitative analysis. Quantitative analysis was particularly useful in the analysis of student involvement in the various areas of the blended learning experience. The Moodle LMS has been particularly useful in providing raw and reliable data. For example, I have been able to acquire an accurate record of how often a student participated online along with their quiz and forum participation results. Qualitative analysis was conducted particularly when looking at the quality of student contributions in the discussion context. I created a scale based on the levels of thinking in the SOLO taxonomy to help analyse the quality of student thinking in their forum discussion entries. This was also done to a lesser degree in analysing their comments in the classroom. Student, teacher and parent feedback comments were also particularly useful in highlighting findings which supported the analysis of the core data.

TIME PLAN

This is how the research project was planned to unfold:

Term One:
- Literature Review
- Prepare teaching unit
- Plan Data Sources to measure Research indicators
- Weeks 9-10 begin teaching unit
- Week 11 – Core Education research training

Term Two:
- Continue literature review
- Weeks 1-4 continue teaching unit
- Class Survey, Focus Group Interview, Teacher Interview
- Data Analysis
**Term Three:**

- Data Analysis
- Write up Preliminary Findings
- Prepare for and present at Taranaki regional AP/DP Conference
- Prepare for and present at U-Learn Conference

**Term Four:**

- Complete Research Report
- Research Report published on Core Education e-fellows site (December 2008)
STUDENT ONLINE ENGAGEMENT

As previously discussed it was a challenge to get the students to adjust from doing very little homework to 4 hours or more per week. Despite this challenge and initial difficulties, an analysis of overall participation rates was very encouraging. The Moodle administration tool was unable to give me a record of student access to the readings so I have used Quiz records to gauge the level of student involvement over the 7 weeks (9 weeks with the inclusion of the 2 week April holiday break). There were a total of 16 readings with a quiz associated with each. Each quiz was made up of approximately 5 sections (quiz types) with a handful of questions in each.

The questions were quite testing of the students’ comprehension and typically forced them to go back to the readings to find the information. To illustrate this I have indicated the most commonly used question types below along with an example question for each:

**Multi-choice:**

Which of the following best describes the British reasoning for limiting its commitments to the League of Nations?

A. [ ] Because they believed it would eventually fail  
B. [ ] They didn’t trust the French  
C. [ ] For financial reasons and they felt less threatened  
D. [ ] They didn’t like the fact that the Russians were members

**Multi-select:**

Choose the correct 3 reasons that Japan decided to conquer Manchuria

a. [ ] Manchuria was building up its army which could threaten Japan in the future.  
b. [ ] Manchuria was rich in raw materials  
c. [ ] Manchuria provided the opportunity for new markets for the Japanese.  
d. [ ] Manchuria provided a location where Japanese people could settle  
e. [ ] Manchuria had good harbours where the Japanese Fleet could anchor.  
f. [ ] Manchuria had excellent farming soil to grow food to feed the Japanese population.
True or False:

Besides the Treaty of Versailles and the League of Nations, France did the following to ensure its future security:

- Refused to disarm and build up its defences (True)
- Made a military alliance with the USSR (Russia) (False)
- Built military alliances to surround Germany (True)
- Tried to increase its population of 40 million to match that of Germany’s 78 million (False)
- Forced all men to join the army for 2 years when they turned 20 years old. (False)
- Rapidly increased spending on a new superior air force (True)
- Drew up plans to invade Germany (False)
- Drew up plans to build a defensive fortress along its border with Germany (False)

Matching – Drag’n’drop:

- Kellogg-Briand Pact: limited the number of warships for particular countries.
- Young Plan: guaranteed France-Germany Western border from attack from either side.
- Treaty of Locarno: reduced immediate pressure of reparation payments for Germany.
- Dawes Plan: banned the use of war in foreign policy.
- Washington Treaty: set up a commission on disarmament.
- League of Nations: reduced the reparation burden on Germany.

Gapfill:

Haile Selassie’s Speech to the League of Nations (Gapfill)

Fill in all the gaps using the word bank:

aggression, Assembly, assistance, collective, commanding, weapons, covenant, justice, League, nations, Rome, struggle, technical

In that unequal ________ between a government ________ more than 42,000,000 inhabitants and having at its disposal financial, industrial and ________, means which enabled it to create unlimited quantities of the most death-dealing ________, and on the other hand, a small people of 12,000,000 inhabitants ________, without resources and having on its side only the ________ of its cause and the promise of the League of Nations, what real ________ was given to Ethiopia by the fifty-two ________ who had declared the ________ Government guilty of a breach of the ________? I assert that the problem submitted to the ________ today is much wider than merely a question of settlement of Italian ________; it is ________, it is the very existence of the ________.
Across all students (n=28) on average 83% of all quizzes were completed. A breakdown shows that 75% of these students had over 80% completion. But what of their results, after all it is easy to just guess and check until you get the right result. The quiz software is automatically configured to reduce a student’s score for each incorrect attempt at an answer. I informed the students that any score of less than 60% meant that they were not completing the quizzes properly and it indicated guessing. So what of the results?

The average result for all quizzes across all 28 students was 72%. However, this figure includes the recorded zero (0%) results of quizzes that were not attempted by some students. When this is adjusted to only include scores where a quiz had been attempted the average result rose to 80%. A full breakdown of each student’s average result of quizzes that were attempted is shown in Graph 1 below:

![Graph 1](image)

The graph shows that only 5 students averaged below 70% in all tests. 23 students averaged at least 70% which indicates that the quizzes were taken seriously by a vast majority of students and used to improve their comprehension of readings.

Students were asked in a questionnaire (n=24; 4 students absent) to rate the usefulness of online resources and activities in helping them to understand the content. The readings (89% positive rating) and the quizzes (87% positive rating) rated highest by a big margin (see Appendix 7). Students in the focus group emphasised how useful they thought the online textbook was saying that the interface and layout made it easy to read:
...it was easy because of the tabs down the side. And you can click on those. In a textbook you have to go back to index [contents] and look and then look up the page whereas with these, you could just click on the tab you wanted.

They also rated the quiz as a really good way to revise and as a tool which helped with comprehension and retention of information:

*With the quizzes.... it was like good because if you read the textbook, you just like read it and you forget about it......but if you do the quiz you have to go back and think about it and it sort of stays in your brain that way.*

Reading textbooks and doing quizzes is nothing new and was described by the regular class teacher as an *elaborate comprehension exercise.* However, they did result in students interacting with the content at a deeper level than they were used to and also served the purpose of giving the students enough basic content knowledge to enable them to interact in other areas.

**INTERACTIVITY IN ONLINE FORUM DISCUSSIONS**

As previously outlined I introduced the students to the forum discussion tool in the first lesson to give them exposure with a simple non-threatening task. This was one of a handful of activities that helped to familiarise students with the Moodle course site in the first two lessons. We also managed to iron out any technical problems during this time.

In the first three forums the students were becoming familiar with the forum editing functions and how to correctly reply to other participants entries. By Forum 4 they were well on their way to mastering the tool. I ensured that all forum discussion questions were relevant to the content that was being covered at the time.
The 12 Forum discussions in the Course (in sequential order)  

<table>
<thead>
<tr>
<th>Nr</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>What I already know</td>
</tr>
<tr>
<td>2</td>
<td>What I want to know</td>
</tr>
<tr>
<td>3</td>
<td>What do you think of the Treaty of Versailles?</td>
</tr>
<tr>
<td>4</td>
<td>Was Hitler taking Power in Germany inevitable/unstoppable?</td>
</tr>
<tr>
<td>5</td>
<td>Italy invades Abyssinia  (Resource provided)</td>
</tr>
<tr>
<td>6</td>
<td>Could/Should Hitler have been stopped at the Rhineland?</td>
</tr>
<tr>
<td>7</td>
<td>Was appeasement the right policy for Britain?</td>
</tr>
<tr>
<td>8</td>
<td>Munich Conference - could things have been different?</td>
</tr>
<tr>
<td>9</td>
<td>Did the Soviet Union betray Britain and France by signing the Nazi-Soviet Non-Aggression Pact?</td>
</tr>
<tr>
<td>10</td>
<td>Why was France defeated so easily?</td>
</tr>
<tr>
<td>11</td>
<td>German invasion plans for Britain - Was Hitler kidding himself?  (with BBC History site resource link)</td>
</tr>
<tr>
<td>12</td>
<td>Debate&quot; What caused World War II?</td>
</tr>
</tbody>
</table>

The first part of the analysis of the discussions is to test the claim that online forums encourage and equalise student participation. Over the 12 discussion forums there were a total of 245 student entries with an average (mean) of 8.75 entries per student (median=9). Graph 2 below shows that 64% of the students had between 6 & 14 entries in total. From my experience of a Year 11 History course for boys it would normally be difficult to achieve such an uptake in a regular classroom. There were three students who made 1-2 entries each. Two of these students had poor attendance and overall homework completion rates. The other student was unusual in that he completed most of the other online preparation work but was not interested in participating in online discussion. That aside it is quite clear that the forums did manage to encourage participation from those that were often quiet in class giving them an opportunity to have their say in a non-threatening and thoughtful way.

The other class teacher commenting positively on this aspect said:

* *I think that definitely the forums meant that a wider range of kids took part and I think as a result of being stuff that they had to write down and see their name next to it was quite thoughtful, whereas in class there might be fewer kids that were engaged in sort of taking part in those sort of discussions.*
One of the other claimed advantages is that the discussion is not lost and that students can enter into the discussion when they feel informed and prepared. This raises the question as to how long the forum threads lasted. The average (mean) number of days that forum postings lasted was 8.3 days (median: 9) with all forums lasting at least 4 days. Graph 3 (below), with data from all 12 forums, suggests that one third of entries happened on the first day and that the forum was all but over by the end of the fourth day.
However, Graph 3 holds data which skews the result. Forums 1, 2 and 12 involved some compulsory time in the computer suite where students were required to make a contribution under supervision. These class times would have skewed the data towards those days which were day 1 (forums 1 and 2) and day 4 (forum 12), clearly seen in the graph. With these removed we can see from Graph 4 (below) that the activity on day one drops to a quarter and that, although the majority of activity in forums was still from days 1-4 (79% of entries), there was a significant amount of ongoing discussion (21% of entries) going beyond the first four days. The forums then tapered off and in all cases were completely over after 10 days. These results thus show that the forums provided for a significant amount of ongoing discussion outside the frontier of the regular classroom and that Chen & Looi’s (2007) point that it allows continued reflection and debate holds true.

The questions that needed to be answered were “how substantial were the forum interactions?” and “what was the quality of these interactions?” Overall the average number of postings per forum was 24 (median=21) with a mean number of teacher postings per forum of 4 leaving the rather large number of 20 student postings on average for each forum. To investigate the question of substance and quality I have chosen four of the forums to study further. Screenshots of each of the teacher initiating questions are shown below:
Forum 4

Was Hitler taking Power in Germany inevitable/unstoppable?

by Mark Catagger - Thursday, 10 April 2008, 10:43 AM

As you now know Hitler became Chancellor in January 1933 and a Dictator by 1935. Try to consider/answer these questions:

- Was it inevitable that Hitler would come to power? In other words, could it have been avoided?
- What was to blame for allowing him to take power? Which of these was most to blame?

Remember to try and respond to each other's comments...

Forum 6

Could/Should Hitler have been stopped at the Rhineland?

by Mark Catagger - Tuesday, 6 May 2008, 07:18 PM

This is a very important question. Weigh up the evidence and argue a case as to whether or not Hitler should have been stopped when he rearmed the Rhineland in March 1936.

Forum 7

Was appeasement the right policy for Britain?

by Mark Catagger - Saturday, 18 May 2008, 04:45 PM

Chamberlain took up the policy of appeasement just as Hitler was poised to become more aggressive in Europe. Look at the reasons why Britain took up this policy and argue a case as to whether or not it was the right policy at the time.

[note: there has been much debate of this policy and after World War II it became a "dirty" word. Countries like the USA still point to the appeasement of Hitler and its failure as a reason for them to act more firmly and pre-emptively against "potential" or "so called" aggressor nations]

Forum 12

Debate: What caused World War II?

by Mark Catagger - Monday, 26 May 2008, 07:14 AM

Use your own knowledge and some of the information in Lesson 20 to discuss the questions below. Historians still debate these questions today - now it is your turn to take part in the debate:

1. What do you think was the MAIN cause of World War II?
2. Were any of the Long Term Causes really that important? If so, why?
3. Who was MOST to blame for World War II?

Table 2 (below) displays the data from the four sample forums. It is interesting to note that there was an overlap of 4 days from 10-13th May when students were contributing to Forums 6 and 7 (From Table 2: Nr 3. Date Range). This supports what was commented earlier, that forums maintain the conversation allowing students to read and contribute to the discussion in their own time. The number of days that forums lasted was steady at about 8-9 with Forum 12 cut short to 5 days because the course finished and the students moved straight away onto their internal assessment assignments.
### Analysis of FOUR Sample Forums [Table 2]

<table>
<thead>
<tr>
<th></th>
<th>Forum Ref Nr:</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>Forum Topic:</td>
<td>Was Hitler taking power in Germany inevitable or unstoppable?</td>
<td>Could/Should Hitler have been stopped at the Rhineland?</td>
<td>Was appeasement the right policy for Britain?</td>
<td>Debate: What caused World War II? [included in class computer time]</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Nr of days Forum lasted:</td>
<td>9</td>
<td>8</td>
<td>9</td>
<td>5</td>
<td>7.8</td>
</tr>
<tr>
<td>5.</td>
<td>Nr of overall postings:</td>
<td>21</td>
<td>21</td>
<td>21</td>
<td>46</td>
<td>27.3</td>
</tr>
<tr>
<td>6.</td>
<td>Nr of student postings:</td>
<td>14</td>
<td>20</td>
<td>19</td>
<td>37</td>
<td>22.5</td>
</tr>
<tr>
<td>7.</td>
<td>Percentage of total entries by student:</td>
<td>67%</td>
<td>95.2%</td>
<td>91.5%</td>
<td>81.4%</td>
<td>84%</td>
</tr>
<tr>
<td>8.</td>
<td>Percentage of total entries by teacher:</td>
<td>33%</td>
<td>4.8%</td>
<td>9.5%</td>
<td>19.6%</td>
<td>16%</td>
</tr>
<tr>
<td>9.</td>
<td>Percentage of students in class involved:</td>
<td>43%</td>
<td>64%</td>
<td>61%</td>
<td>86%</td>
<td>64%</td>
</tr>
<tr>
<td>10.</td>
<td>Nr of student replies to teacher:</td>
<td>13</td>
<td>14</td>
<td>12</td>
<td>18</td>
<td>Overall 63%</td>
</tr>
<tr>
<td>11.</td>
<td>Nr of student replies to other students:</td>
<td>1</td>
<td>6</td>
<td>7</td>
<td>19</td>
<td>Overall 37%</td>
</tr>
<tr>
<td>12.</td>
<td>Nr of conversations (3 or more posts per discussion):</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>7</td>
<td>3.8</td>
</tr>
<tr>
<td>13.</td>
<td>Average (median) number of words per student posting:</td>
<td>72</td>
<td>71</td>
<td>50</td>
<td>52</td>
<td>61</td>
</tr>
<tr>
<td>14.</td>
<td>Average (mean) number of words per student posting:</td>
<td>90.4</td>
<td>92.5</td>
<td>73.5</td>
<td>75.6</td>
<td>83</td>
</tr>
<tr>
<td>15.</td>
<td>Total amount of new information/evidence introduced by students:</td>
<td>26</td>
<td>29</td>
<td>26</td>
<td>30</td>
<td>27.8</td>
</tr>
<tr>
<td>16.</td>
<td>Frequency of Different Levels of Discussion for each Forum:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Overall Percentage:</td>
</tr>
</tbody>
</table>

**Level 1:**
Just agrees. Repeats info

|   | 0 | 1 | 1 | 5 | 8% |

**Level 2:**
Agrees/Disagrees with new info

|   | 1 | 3 | 1 | 4 | 10% |

**Level 3:**
Agrees/disagrees with new info which supports argument

|   | 13 | 14 | 14 | 21 | 70% |

**Level 4:**
Above plus links made beyond immediate scope of subject area

|   | 0 | 2 | 3 | 6 | 12% |
The number of overall postings was also steady at 21 each with Forum 12 larger, as mentioned earlier, due to the compulsory computer suite time encouraging greater participation. The number of students involved in the forums grew from 43% (Forum 4) to close to two thirds of the class. This amount of involvement was very encouraging. Forum 4 shows that I contributed to one third of forum entries, this due to my decision to respond to student entries to encourage them and signal that their entries were being read. I deliberately dropped off my involvement in later forums to give students space to respond to each other. A further breakdown of the ratio of student to teacher involvement shows that 84% of all entries were made by students (From Table 2: Nr 7. Average: Percentage of total entries by students).

Before I discuss the content of the forums, I would like to comment on the size of the postings. What intrigued me was that the median size of postings consisted of 61 words (mean was 83 but distorted due to the influence of a handful of very large postings). This indicated to me that students took them seriously and wanted to contribute something meaningful.

One of the claims about the benefits of forum discussions is that they bring more diverse views and allow students to participate in the construction of knowledge and meaning. I went through the forums and noted down any new information or evidence that students contributed to support their argument. Across the four forums there was an average of 27.8 new amounts of information (From Table 2: Nr 15. Average: Total amount of new information/evidence introduced by students). Mishra and Juway (2006) recommended that the teacher summarises each discussion as they come to an end. I have written a summary of Forum Discussion 6 which asked the question: “Could/Should Hitler have been stopped at the Rhineland?” I have done this to illustrate the diverse views offered by students and their ability to construct knowledge through discussion. The following summary incorporates only the information/evidence that the students contributed to the discussion:

France should have stopped Hitler rearming the Rhineland in March 1936 as it was a clear breach of the Treaty of Versailles. The French were in a position to crush the German army who they outnumbered 3 to 1. Hitler was still weak and his purpose was only to test the resolve of the French and British. They should have acted to hold
Hitler to previous agreements to stay out of the Rhine. However, France was going through serious political difficulties at the time and was also recovering from the effects of the Depression. There were also lingering memories of World War I which caused a large section of the public to oppose war. Without public support a major war could not be fought, as they not only provided the men to fight the war, but they could likely bring down their government. The French could also not act as they were members of the League of Nations and could be held to account for breaching its rules by acting as an aggressor, despite the fact that previous acts of aggression by Japan and Italy had gone unpunished. Furthermore, France’s closest ally Britain was opposed to any action as they held the view that Germany had the right to rearm the Rhineland as it was their own territory. France also feared that Germany would interpret any French entry into the Rhineland as an act of war so were willing to follow the British lead of appeasing Hitler. However, one could argue that both France and Britain were too trusting of Hitler’s overtures of peaceful intent. Possible consequences if France did act could be a boost to Hitler’s prestige. After all he was a master of political blame. He could have used a French incursion into the Rhineland as a justification of the need to protect Germany’s borders against aggressors and also to increase overall rearmament. One could argue that it was France’s own fault for its predicament because of its greed at the Versailles negotiations in 1919 where it had alienated its closest neighbour, Italy, by denying it a share in the spoils of war. Italy had proven willing and able to stand up to Hitler when he attempted Anschluss two years earlier (1934). France should have at least followed Mussolini’s example and moved its troops to the German border. It could have forced Hitler to reconsider and lose confidence. A French show of strength at this critical time could even have meant no future world war. But one could argue that such a move would have played into Hitler’s hands through his winning public support to press on faster with rearmament to secure German borders against possible French aggression. This would inevitably have led to a larger and stronger German army to eventually overpower France.

The amount of new information, level of understanding and the many connections made by the students around this discussion were quite profound.

It is also claimed that a significant benefit of online discussion is that it promotes higher order and reflective thinking. I have rated each of the student entries using my own model which is based on the SOLO taxonomy. I have also given one example of a student contribution which illustrates each level.
**Level 1: (bottom)**

This is where the student just agrees with another student and ends up repeating the information. This would be at SOLO’s Pre-structural or Unistructural Level.

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**Level 2:**

The student agrees or disagrees and brings in some new information but the argument is not well constructed or presented. This equates to SOLO’s Multistructural Level where connections are made but the significance of the relationship between them is not connected.

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**Level 3:**

The student agrees or disagrees with new information with a well supported argument. This equates to SOLO’s Relational Level where the student is able to demonstrate the relationship between connections made and the whole.
**Level 4: (top)**

The student achieves level 3 but also makes links beyond the immediate scope of the subject area. This could include bringing in long term considerations. This equates to SOLO’s Extended Abstract Level.

The overall results show that only 18% of entries were at Level 1 or 2. Over 80% of student entries were at Level 3 or above where they were able to argue a well connected case with new evidence. This is well above what I had expected and a significant argument for the benefits of online discussion forums.

I now turn to who the students were interacting with. I think that there can be no argument that they were interacting with the course content when contributing to the discussions. My aim was to get the students to interact less with me and more with each other as the forums progressed. The results are that 63% of entries in the forums were responses to the teacher initiated question or follow up teacher questions. This leaves 37% of student responses that were to each other. As a ratio it does not seem much but it is still quite significant. It was evident that the students grew in confidence over the 7 weeks with a growth in the number of conversations (defined as 3 or more entries). The students read other students views and were able to express their own. I have included an example of a conversation below.
In the conversation above Patrick focuses on the realities of stopping Hitler at the Rhineland with some quite strong arguments. Nick has read Patrick’s entry and comes up with a strong counter-argument. Patrick and Andrew then respond to Nick’s counter-argument in support of a strong action against Hitler. It is clear from this conversation that the students are operating at a reasonably high level and are able to argue their cases quite convincingly. A huge benefit of this form of conversation is that students are able to articulate their ideas better than they would in a more immediate and pressured classroom environment. After all, how many of us adults have verbally expressed our opinion in front of a room full of our peers and later wished that we had phrased our argument better?
Before teaching this class I knew only 4 of the 28 students having taught them Mathematics the previous year. The forum discussions were a big help for me to get to know the students, understand how they thought and to gain feedback on their level of understanding of the course content. The forum discussion forced a larger proportion of students to express their ideas whereas in previous situations they could hide amongst the class or play on the sympathy of the teacher not to embarrass them in front of their peers. They were given far more opportunity once online. They had to participate and it was active, interactive and reflective (Payne, 2007).

PERCEPTIONS OF THE VALUE OF THE FORUM DISCUSSIONS

It is interesting to note that student perceptions of the value of the forum discussions were very different from those of adults. The average student rating for the forums was only 49% when assessing the usefulness of online tools and resources (see Appendix 7). Some students commented that it was interesting but did not help them much. Others who rated the forum as not so useful often indicated that their involvement was on the low side and that they thought that they would have benefited if they had become more involved. There were however a significant number of students who rated the forums highly with comments like:

*It helped me learn because we had to give our own views on the topic which made us think about it more.*

*Made you think about it more and learn from what other people write.*

*Because it helped me to see different viewpoints and to understand different reasons for certain events.*

*It was useful in a sense that it helped you develop your own viewpoint, and take the time to think about the topic of the forum.*

One student even said that *the forum has a very big potential in the aspect that students can teach each other. The course should have a larger emphasis on using the forum.*
The regular class teacher was very positive about the ability of forum discussions to not only involve a wider range of students but also the level of critical thinking that they generated:

*I think that some of the forum questions were very successful in terms of generating depth of student response. There was a level of critical thinking that I wouldn’t normally associate with some of the students of a more limited ability.*

Another stake-holder in this whole experience are the parents. We were fortunate to have parent-teacher interviews held near the end of the teaching unit. The regular class teacher commented that although some parents were unaware of their son’s online involvement from home, most were and talked a lot about it at the interviews. He said that:

*A lot of parents showed that they were really interested in what their sons were doing and had a very clear idea about what was happening so parents were reading the forums and so they have a wider audience than we might necessarily think. So people were really interested in the discussion board.*

The blended learning enabled some parents to become interested and involved in their child’s learning experience, surely a very positive result. One parent even observed that students’ discussion skills improved the more they were involved:

*I was interested in the online forum. I read a good number of the questions and comments and was impressed by the improvement in understanding displayed by students over the weeks.*

There can be no doubting the immense value that online discussion forums can have for student learning.
OPPORTUNITIES CREATED BY INCORPORATING DIGITAL AND ONLINE CONTENT

The Learning Management System enabled me to not only make content available to the students outside of the classroom, but also to add a greater range of content delivery modes to meet the needs of different learning styles. Some students preferred to just read content and do the quizzes. Some students really enjoyed the podcasts that were made available. Others liked learning from the YouTube documentary videos. Others preferred a lot of discussion whereas some preferred little. One parent who observed the positive impact on her son commented that:

_The online learning seemed very effective in capturing [my son’s] attention and enthusiasm. He spent a great many hours watching podcasts and reading online - we often had trouble pulling him away from it! The historical footage undoubtedly made the subject more real for him as well as being more interesting than reading a lot of text on its own. From what I observed, there was a lot of flexibility in that he could choose from a considerable range of options and spend as long on different aspects as he wished - so he could follow up what seemed most interesting to him in greater detail, and he was often drawn from one thing into another._

This is an important aspect of the blended learning model. In creating and adding to the course content, it added immensely to my own knowledge and preparation. It also enabled me to cater to the diverse learning styles within the class. There also remains a need to continually update content, particularly in a course covering a major event in 20th Century History. We simply cannot teach the course as if nothing has changed in the last 20 or 30 years. It has been my experience that exposing myself and my students to an online environment also develops an awareness of challenges to historical points of view. Some examples are:

**BOOK**

“Churchill, Hitler, and the Unnecessary War” by P. Buchanan, published in 2008. Extracts from this book could be given to the students to help them to discuss some of the myths surrounding the events leading to the outbreak of war in 1939.
PODCAST

National Radio NZ Interview (20th March 2008) with David Andelman – author of “A Shattered Peace” which talks of the impact the 1919 Treaty of Versailles is still having on world events. This resource would be brilliant for students to listen to at the end of the course to create discussion as to how much the Treaty of Versailles had to do with the causes of World War II.

ESSAY

“The German Threat to Britain in World War Two – Was an invasion likely?” by D. Cruickshank. This online essay, one of many interesting essays on the BBC History Website, challenges the legend that Britain was a real target for invasion by Hitler’s Germany after the fall of France.

YOUTUBE VIDEO

“The Spanish Civil War – The Last Great Cause”. This two part YouTube video resource, previously unavailable in a standard secondary school history course, gives a better account of the causes of the Spanish Civil War and the role of the different participating groups. I was able to embed this resource into the course. Previously we were reliant on scant school textbook information about this war.

NEWSPAPER ARTICLE & ONLINE VIDEO

A Dominion Post newspaper article of Saturday 17th May caught my eye. It was titled “Appeaser tag angers Democrats” and discussed President George W. Bush’s likening of Senator Obama’s call for direct talks with Iran’s leaders over a nuclear standoff with that of Chamberlain appeasing Hitler in the late 1930s. I digitalised and posted the article online. This also led to my discovery and embedding of an msnbc.com video called “Chris Matthews: Appease this” of May 17th 2008. Chris Matthews on the programme Hardball challenges one of Bush’s supporters for misrepresenting the historical event. Presenting these resources to students can make history relevant today and can augment discussion around the historical events.
As educators we need to be challenging our students to consider new evidence otherwise we run the danger of perpetuating historical myths. The ability to organise and link information into the online course site threw up great opportunities and enormous potential. We are spoilt for choice if we can move beyond the tatty textbook and limited classroom experience and into the resource rich and rapidly growing online environment.

INTERACTIVITY IN THE CLASSROOM

One of the unexpected consequences of the online work was the extent of the positive disruption to the normal classroom teaching routine. The majority of students were arriving in class already armed with some good content knowledge. But what is normally done in class outside of a blended learning environment? The teacher might recap key points from the last lesson and introduce a topic and some ideas around it followed by some reading from the class textbook or a short video. This could be followed by some discussion and teacher notes onto the board which students then copy. With this type of regular lesson these questions need to be asked:

- To what extent is the information absorbed in this one lesson?
• How deep an understanding do the students gain?
• Are genuine links being made to ideas across the unit?
• What level of participation and understanding do weaker students have?
• To what extent are students’ minds on the job in the classroom?
• To what extent are they being drawn into the content? At a superficial level or deep enough to fully absorb it?
• How much time do students spend thinking about the topic outside their approximately 4 hours of weekly class time?

The experience I had was that it took until about halfway through the unit for some real changes to the classroom learning experience to occur. This was due mainly to the initial struggle with the students’ lack of routine in terms of homework completion. As previously mentioned the unit was over 7 weeks and the first 2 weeks were spent on drilling the students on the required habit of completing the online work. What I found was that students were arriving in class with greatly varying amounts of preparation done. With a significant number unprepared, early on up to half, I had to completely change what I intended to cover. Instead of engaging discussion around primary resources and how they related to what the students already knew, I had to spend whole lessons on recapping and teaching content so that the students could understand the basics of what was happening. Until I could get at least 75% of the students completing the preparation I felt that I had to continue on this way. In doing so I also ran the risk that students who had completed the homework would get bored and not see the need to continue doing preparation if it was going to be covered in class anyway. Thankfully, motivated students found the online homework stimulating and engaging enough to want to continue with it while the others caught up. So a lot of time was spent in convincing the students to do the work. Obviously there were technical glitches that affected a small number which had to be sorted too.

Thankfully, by the start of Term Two with 4 weeks to go I had the majority of students caught up with readings and quizzes over the holidays (average overall quiz completion rate of 88%). The students were fresh from the break and ready to go.

Now that the students were arriving prepared we could start to do more interesting things. As an example one lesson went like this:
Lesson on Czechoslovakia Sudeten Crisis of September 1938 – (15 May 2008)

- Starter discussion with a cartoon
- Questioning students/recapping background & earlier events
- Short video clip – approx 5 mins
- Short discussion/questioning about the Munich Conference (a later event)
- Groups of 2-3 students do source analysis worksheets – cartoons & matching statements
- Discuss each of the sources as a whole class

This lesson was typical of a good number of the later lessons. From the above we can see that students were continually being asked to interpret a substantial amount of material given what they already knew. To see the benefits we will look more closely at this lesson which was both video and audio recorded. On 43 occasions a student contributed in some way to whole class discussion. On a number of occasions it was difficult from the recording to identify which student was contributing information to the class. Of the 24 students present for this lesson 10 different students were identified contributing to class discussion. On 16 other instances students contributed who I could not identify as they were off camera or voices were difficult to match. I confidently estimate that two thirds of the class (16 out of 24 students) contributed to the questioning and discussion at some stage during this lesson. Additionally, students worked in groups discussing resources where the majority were fully engaged.

In one of the last lessons of the unit the class debated what they thought were the most relevant causes of World War II. This lesson involved using information from the whole 7 week topic and the linking of events. The lesson went like this:

Lesson on Debating the Causes of World War II – (27 May 2008)

- Introduce Discussion/Debate – Why is it important?
- Look at 2-3 student Forum Entries from Moodle site (using data projector)
- Identifying Long Term & Short Term Causes with discussion & making connections
- Group Discussion 5 mins choosing what they think is the most important long and short term cause
- Each group contributes back to class leading to more discussion & debate
This lesson was one of the most stimulating of the entire unit. Students were engaged because they were asked to form an opinion about a much debated historical issue. There were 55 contributions from individual students to class discussion. Of the 24 students present **over two thirds** participated with substantial contributions. I have divided the student contributions into three levels:

1. Lowest level = recall or short answer to a direct teacher question
2. Medium level = puts forward a point of view or challenges another student’s point of view but not well supported
3. High level = puts forward a point of view or challenges another student’s point of view which is well supported with evidence and/or well considered

Two of the survey questions were purposed towards analysing student perceptions of time spent in the classroom. The questions (from Appendix 1) and results were:

4. After completing any online preparation, do you think that your **understanding of what was talked about in class** improved?  
   
   \[0\] [not at all] \[1\] [a little] \[2\] [a lot] \[4\] [CIRCLE ONE]  
   
   **Average Result: 2.96/4 or 74%**
5. As a result of online preparation work, do you think that you were more involved in class than you usually are?

0 1 2 3 4 [CIRCLE ONE]
[not at all] [average] [a lot]

Average Result: 2.18 or 55%

Students felt that they were about as involved as they had been prior to the blended learning experience (question 5 above). However, what is meant by involvement? A student might define it as something concrete where he puts up his hand and addresses the class. But it could be more loosely defined as closely following the class discussion. If you are following it then surely you are involved. After all, if you are reading a book then you are involved or engaged in that book’s story. The answer to question 4 is probably a stronger indicator to the benefits. Students felt that their understanding of class discussion had improved significantly.

Other feedback suggests that weaker students seemed to benefit more from the blended learning style, again supporting Chen & Looi’s (2007) argument that there is an equalisation of engagement. One student said:

_We interacted more with the teacher. Oh I interacted more. Like I got used to doing it every day, in History. Yeah answered some questions and talked about the topic that I did the night before._

Another said:

_Yeah like I was quite surprised cause when I did the online work for once I come to class and like, I think you probably would have noticed it like...I said stuff. I didn’t really ever do that in Year 9 & 10 or anything...and then say if you got it right or whatever like you would, you would participate correctly and everyone would like yeah that’s right, it would motivate you to._

The benefits seen here were that students were able to come to class prepared and to participate more than they had in the past and at a deeper level. Students had time to think
about the information over a longer time period and were given the opportunity to interact with information in different ways which suited their learning styles. One student recognising this said that:

*With blended learning I had a source of extremely helpful and up to date information that I could go over in my own steady pace and learn much more effectively*

The regular classroom teacher saw the model of preparation as hugely beneficial and aligned to the new curriculum thinking:

*I think that whole idea of doing preparation and coming to a class armed with knowledge is a really good model, because what it’s doing is actually saying to the kids...the teacher’s actually not the person with the knowledge here...you can come to this class with knowledge and you can contribute and I think that is a really important message and I couldn’t argue with that and I think that idea of students doing activities that are preparing them for lessons, rather than just doing homework that is finishing off something from a lesson, is a really good aim and one that was very much in spirit of the new curriculum because it was one that sort of says okay there is a whole room of learners here and people can bring knowledge and access knowledge so I would be very keen to see in my own teaching and other people in the department to see a shift to a sort of focus on preparation for lessons.*

One student saw the direct relationship between the amount of class discussion and homework preparation:

*Ah well I guess since you’re already coming prepared to class you sort of know about the topic and sort of um there was definitely more discussion going on um yeah it’s...it’s good.*

While students appeared to enjoy the more discussion based and interactive nature of the lessons, it would catch students out occasionally when they had not done the preparation work making the lessons difficult to follow. Other students saw benefits in the variety of activities, and in particular the opportunity to occasionally work in a computer suite:
You aren’t in the classroom all the time so you don’t get bored. It is much more fun as there are quizzes etc

Being on the computers was good because stuck in class all the time is boring

One of these computer suite lessons required each student to contribute two glossary definitions into the Moodle LMS from a list of terms or people associated with the topic. How to write a glossary definition was modelled by me with students input. The regular classroom teacher considered this computer suite lesson to be one of the best that we did.

I think that one of the best lessons was the day we were down there and we were doing glossary. I think that was fantastic so the way in which the students would choose glossary terms and then put them up on the site with an explanation of what this meant in terms of the topic. I think that was a fantastic lesson and I think it really met all the sort of independent learning community goals that you know we might have been after.
THE FUTURE OF BLENDED LEARNING

IMPROVING THE MODEL

This experience has caused me to think about possible ways in which the model that I used could be improved.

The difficulty with my model is that the online work can be perceived by students as separate from the work done in class. This means that there is a constant need to include online content in the classroom environment so that the two environments are seen as connected and co-dependent. Recognising this I decided to put online content up in class using the data projector as often as possible. Occasionally I included student forum postings in the classroom to stimulate further discussion. I also encouraged the continuation of interesting class discussions via the online forums for homework. When I showed snippets of video in class I deliberately used the YouTube embedded content from the LMS rather than playing a file from my laptop. Again this was to help with the connection for the students between the classroom and the online LMS.

Students also commented that although the preparation aspect of the course was beneficial to their learning it was probably unsustainable because of the intense amount of homework completion required. One student said that if they made online courses for like every subject it would just get too hard to do. In other words if a student was required to do 4 hours a week homework from say 5 subjects, then that would require 20 hours of homework which is unrealistic for the vast majority of students.

Another issue, highlighted by the regular classroom teacher, is that although there were real benefits from the online model I used it was really just an elaborate comprehension exercise (reading and quiz) with the content provided by the teacher. He advocated the need for a more inquiry focused approach where the students find and share their own content.
These three issues bring me to a possible solution and that is to increase the blend further. The discussion forums are a necessity in my view. We have already seen the benefits of these for student learning. A progression towards the students having online access available to them in class is my answer. I recommend that the students in class be connected to the internet with mobile devices, preferably laptops, where they can be online for short amounts of time when the need arises. I would stick with the Moodle LMS for student interaction but teach the lessons with a more inquiry based approach. A possible lesson could look like this:

- Students arrive in class and look at last night’s forum discussion entries on previous topic with some discussion
- Teacher does short 5 minute introduction to new lesson content with brief slideshow explaining the basics of what happened around a particular event. While this is occurring students are required to note down any questions raised about the event – deeper question such as “Why did so-and-so support that?” or “Is there any evidence that explains why so-and-so made that decision?” etc.
- These questions raised by the students are summarised and put up in a new forum discussion.
- Students go online and search for answers to those questions and contribute their discoveries to the forum
- A closing class discussion around information found so far and any further issues raised

For Homework:

- The forum discussion continues
- Some additional resources are made available to the students via the learning management system
- Students could complete a short quiz which may require them to find out more information

The model above makes the forum discussion more of a central hub for student activity. It blends the online and classroom environments to a greater degree thus making them more difficult to be viewed as separate entities. Students take more ownership of coming up with relevant questions and finding the answers to those questions, in other words “inquiry learning”. The teacher role changes to one of managing the learning environment so that it goes in the right direction, but allows discussion to evolve around related topics that the students find of interest. Students could take turns summarising each forum discussion as it
comes to an end. They could also collaborate in writing a class set of notes via Moodle, a wiki or another appropriate online collaboration tool.

The tools required for the model just described are a combination of collaborative web tools and mobile devices.

**COLLABORATION WEBS**

The 2008 Horizon Report states that the time to adoption of Collaboration Webs is one year or less. Where previously online tools had been expensive or difficult to adopt we now have a plethora of ever increasing free tools with which to create and share content.

One example of the most basic yet already well adopted of these tools would be Google Docs. Google is currently making a big deal of targeting the education market with free and easy to use web based tools. The idea is to store information online rather than on stand-alone PC’s or an institution’s servers. This way content can be accessed from anywhere and at anytime. Collaborators can work on the same document which can be updated in real time rather than bouncing back and forth different versions of a document.

Another example is Zoho which is targeting the business market with its large range of online tools. However, the Zoho Productivity and Collaboration Apps suite is free and available for individuals or institutions to adopt and collaborate with in an educational environment.
Those mentioned above are the market front runners however there is a rapidly expanding amount of free online applications for anything from file storage, photo editing, communications and you name it.

It is not a case of if but when these tools will replace similar PC based software applications such as Microsoft Office.

INTERNET ACCESS

The use of collaborative web based tools would not have been considered practical a short time ago as internet access was not at the required standard to realise their use, but it is now. This article appeared in the New Zealand Herald only this year.

nzherald.co.nz

Nearly two million subscribers online in NZ

8:26AM Saturday August 45, 2006

The latest figures from Statistics New Zealand show 1.5 million subscribers are now hooked up to the internet and most have broadband.

Broadband subscriptions have increased 10.7 per cent in the six months to March 2008, to reach 811,000.

With every audience that I have presented to on blended learning the question is always raised as to how their students can possibly access online content if they don’t have internet access. My answer is always to ask your students how many of them can access the internet
from outside school and you will be surprised. In a city such as Wellington where I teach internet access from home is over 90% for all students and growing. We are heading into a national election where both major political parties have placed broadband infrastructure development on the table as an important election issue.

**MOBILE TOOLS**

The other key to a more integrated blended learning future is the availability of mobile tools to access the web applications. Most schools have an ICT infrastructure build on computer suites which are often overbooked and impractically laid out. In this research project it became clear that when students moved out of their normal classroom environment and into a computer suite their attitude changed. There was a sense that computer rooms constituted fun and play. We need to move away from this old model and give the students web access in their normal learning environment.

Mini Laptops are a likely solution which could meet this need. They have been around for just over a year, started by the release of the Asus Eee PC in October 2007. Different models have been hitting the market since with improved quality and at increasingly competitive prices. With a school wireless infrastructure that can handle many users there is a case for making these available to students either as class-sets or through student ownership.

The Horizon report (2008) suggests that within 2-3 years the student web tool of choice will be the mobile phone. They give several examples including Montclair State University which in 2007 had over 4000 students carrying a Campus Connect mobile phone. Currently standard mobile phones are not conducive to good web surfing. However, the iPhone and the recently announced Google T-Mobile G1 are starting to make web access via mobile phones a pleasant and realistic experience. I could imagine that within 3 years all students will have a mobile phone of their quality and will be using them regularly in class to make blended learning a more available and natural part of learning.
CONCLUSION

The New Zealand Ministry of Education Curriculum document (2007) states that *Schools should explore not only how ICT can supplement traditional ways of teaching but also how it can open up new and different ways of learning*. This study has attempted to do just that by investigating the implementation of one particular model of blended learning and its impact on student engagement through increased participation and interaction. It has found that students have interacted at a deeper level with the course content which they found to be not only more up to date and relevant but also to be far more engaging. Students not only engaged more with the teacher but these interactions were positive, enlightening and thought provoking, particularly through the online forums. Students were also prepared to engage with each other through the forums and in the classroom as they became more confident with their knowledge of the content.

Student involvement, both online and in the classroom, not only increased but equalised to include lower ability students who had little history of participation. Learning was occurring at a deeper level and more regularly as the blended nature of the course allowed thinking and reflection to occur at anytime and in anyplace.

Blended learning is an evolving concept and will become more collaborative as we see the rapid development of new tools allowing anywhere and anytime access to the internet. There is a move to cloud computing where everything is stored online encouraging us further towards a web-based and collaborative environment.

There is a need for further investigation and research as this rapidly evolving online environment becomes more readily adopted by the Secondary Education sector. There is the danger of being constantly wowed by purveyors of new tools thus requiring a need to be critically evaluating their usefulness. However, we must find ways to trial and experiment to test their worth and how they can improve student learning. If we don’t then we run the risk of rapidly being left in the digital dust and becoming increasingly irrelevant surrounded by a fast changing world of new learning technologies.


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APPENDICES

APPENDIX 1 – STUDENT QUESTIONNAIRE

ORIGINS OF WORLD WAR II, 1919-41

BLENDED LEARNING QUESTIONNAIRE

11 History GF, Wellington College
Thursday 26th June 2008

Name: ____________________________________________________________ [optional]

IMPACT OF BLENDED LEARNING

1. Blended learning is a combination of online and classroom learning. To what extent did you enjoy your experience of Blended Learning?

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<tr>
<td>0</td>
<td>not at all</td>
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<tr>
<td>1</td>
<td>a little</td>
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<td>2</td>
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[CIRCLE ONE]

2. To what extent do you think that Blended Learning helped you to understand the course content better than if it were taught normally?

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<td>a lot</td>
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[CIRCLE ONE]

3. To what extent did you complete the online preparation work?

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<tr>
<td>0</td>
<td>not at all</td>
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<tr>
<td>1</td>
<td>average</td>
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<tr>
<td>2</td>
<td>over 90%</td>
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[CIRCLE ONE]

4. After completing any online preparation, do you think that your understanding of what was talked about in class improved?

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<td>1</td>
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[CIRCLE ONE]

5. As a result of online preparation work, do you think that you were more involved in class than you usually are?

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[CIRCLE ONE]

6. Did you feel more motivated to find out more about the topic when doing the online work?

YES NO

[CIRCLE ONE]
7. In the end of year external exams, how likely is it that you will choose to answer the essay or the perspectives question with the World War II topic?

   0   1   2   3   4  [CIRCLE ONE]
   [very unlikely] [maybe] [very likely]

8. How much more than usual did you interact with other students by doing the blended style of course?

   0   1   2   3   4  [CIRCLE ONE]
   [less] [about the same] [a lot more]

9. How knowledgeable do you now feel about the topic: Origins of World War II?

   0   1   2   3   4  [CIRCLE ONE]
   [not very] [average] [very]

10. If you could give one major advantage of doing the blended learning style. What would it be?


11. If you could give one major disadvantage of doing the blended learning style. What would it be?


ONLINE TOOLS & RESOURCES

12. How easy was it to first learn how to use the online course site?

   0   1   2   3   4  [CIRCLE ONE]
   [difficult] [average] [very easy]

13. How confident are you now when using the online course site?

   0   1   2   3   4  [CIRCLE ONE]
   [not very] [average] [very confident]
14. The following are different activities from the World War II online course site. Please state how useful you think that each of these was in helping you to gain better understanding of the course content:

a. [Online Textbook]
   - 0 1 2 3 4 [CIRCLE ONE]
   - [not very] [average] [very useful]

b. Quiz
   - 0 1 2 3 4

c. Video
   - 0 1 2 3 4

d. Student Notes
   - 0 1 2 3 4

e. Talksizzle in the Loungedizzle
   - 0 1 2 3 4

f. Course Glossary
   - 0 1 2 3 4

g. Additional Resources
   - 0 1 2 3 4

h. Chat Room
   - 0 1 2 3 4

i. Timeline
   - 0 1 2 3 4

j. Fling The Teacher Revision Quiz
   - 0 1 2 3 4

k. Messages
   - 0 1 2 3 4
15. Which of the following types of Hot Potatoes Quiz Questions did you find most useful to help you remember the course content? Please rank them in order of usefulness. 

Put number 1 - 6 in the boxes.

6 for most useful down to 1 for least useful.

- Multichoice
- Multiselect
- True/False
- Gapfill
- Matching (with menu)
- Matching (drag’n’drop)
- Crossword

16. How involved were you in Forum (Talksizzle) Discussions:

0 [not at all] 1 [an average amount] 2 [very involved] [CIRCLE ONE]

17. To what extent did your involvement in the Forum (Talksizzle) Discussions help you to understand the course content better?

0 [not helpful] 1 [of some use] 2 [very useful] [CIRCLE ONE]

Please comment further on your last answer?

Thank you for completing this questionnaire.

Hopefully not your last smiley face.....😊
The Origins of World War II 1919 – 1941 (25 Lessons)

Background

1. Introduction to The Course Site and the Topic: World War II

What attempts were made to establish a permanent peace after World War I? – The Search for security after World War I

2. The Ending of World War I (1)
3. The Ending of World War I (2)
5. Treaty of Versailles – Reactions & Opinions
6. League of Nations; Threats to Peace
7. 1924-29 An Era of Hope

What challenges to peace occurred in the 1930s? – Fascism and aggression

8. 1929-35 Depression; Rise of the Nazi Party
9. 1929-35 Rise of Aggressive Forces

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Week 11 with Mr Fountain & April Holidays [3 weeks] --------

10. Italy and Abyssinia; Failure of The League
11. Italy and Abyssinia; Failure of The League
12. Germany Reoccupies Rhineland; Japan Invades China
13. Spanish Civil War and The Axis
14. Course Glossary & Revision Lesson

Why did war break out? – The failure of appeasement in the face of aggression

15. Appeasement and Anschluss
16. The Czechoslovakia Crisis
17. Poland and War
18. The Fall of Western Europe
19. Britain Alone
20. Operation Barbarossa
21. USA Isolation and Pearl Harbour

Review – Revision and Reasoning

22. Discussion/Debate – What Were the Causes of World War II?
23. Essay Plan – Late 1930’s
24. Revision and Timeline to 1941
25. Glossary Rating Lesson

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Weeks 5-7 Internal Assessment Project [3 weeks] ------------

Final Data Collection

1. Class Questionnaire
2. Student Focus Group
3. Teacher Interview
APPENDIX 3 – NAVIGATING COURSE SITE DIAGRAM

- **Breadcrumbs**: People of the topic will appear here. Hover your mouse to see who it is.
- **Course Name**: Click on your name to access your own profile.
- **The forum discussion area**: This tells you that you have 2 unread forum discussion entries.
- **Calendrier**: This “Class Common Area” is always visible and is the place to access group discussions and important information.
- **Real time chat room**: Hover over the Course (Red) dates to see what we are doing in class.
- **Orange shading**: Orange shading tells you what lesson we are currently on.
- **Forum discussion area**: Here you can send or receive messages from other course members.
- **Click here to see profiles of other course members**: This tells you who else is currently or recently been online.
- **Activities**: Use these “minus” buttons to hide each.
- **Messages**: Click here to see profiles of other course members.
- **Search Wikipedia**: Search Wikipedia by direct entry into box. Search results open in a new webpage.
- **Once you start doing quizzes you can access your grades here**: More lessons will be revealed here as we work through the course.
- **Online Users**: Links to useful sites which open in a new webpage.
- **Real time chat room**: This tells you who else is currently or recently been online.
- **Search Wikipedia**: Search results open in a new webpage.
I am a History, Mathematics and Computer Studies teacher at Wellington College and am currently on a one year teacher research fellowship. Last year I taught my Year 11 History class with the help of an online Learning Management System. The students learnt their content both at home via the internet and in class. This “blended” approach proved very popular with the students.

This year my research project is to improve and further assess this teaching method. Your History class has been chosen to take part in this project which is called “How can student interactivity and be enhanced through the use of a blended learning approach?”

WHAT IT WILL INVOLVE

Every student in your class will be added to an online Learning Management System called Moodle and given their own individual logon access to the course called "Origins of World War II, 1919-41".

You will be taught mostly by me during the course which will include the following weeks/dates:

- Term 1  Weeks 8-10  (27th March-11th April)
- Term 2  Weeks 1-3  (5th May-23rd May)
- Term 2  Week 7  (16th June-20th June)

This is a total of 7 weeks with breaks for April Holidays (2 weeks) and your NCEA internally assessed project (3 weeks)

The online part of the course will provide you with the following:

- Digital Textbook with plenty of pictures, maps, diagrams and occasional animated content
- Online Quizzes matched to each textbook reading – Your results are recorded and accessible anytime
- Useful Word/PDF resources including some for more extended reading
- Links to other useful websites
- Short movie documentary clips
- Visual and Audio Podcasts
- A range of Revision Quizzes
- Revision notes for the whole course topic
- A range of model answers for examination questions – particularly essays
- A messaging system so that you can communicate with other class members
- Access to forum system so that you can take part in discussions about parts of the course – this has proven useful to help you understand the topic better
- Message access to myself and Mr Fountain to ask questions outside of class time

Note: You will have full access to all resources until early December. I.e after you have completed your NCEA external History examination.
WHAT YOU WILL NEED

To access the course from home you will need the following:

- A current email address accessible from home. This is necessary as the Learning Management System will not allow enrolment without one.
- A computer at home.
- Access to broadband internet from home.

What if I do not have computer or broadband access from home?

School computers with internet access are available in the College library before, during and after school time. Broadband computer access is also available from Public Libraries, internet cafes. If you have difficulty with this issue then please discuss it with either me or Mr Fountain.

WHAT YOU WILL BE ASKED TO DO

You will be asked to **come to class prepared**. What does this mean? You will need to do the following work from home 4 times per week (approx 4-5 hours total per week)

- Read resources – this may include watching a video or listening to a Podcast
- Do an online quiz – these results are recorded and accessed by you and your teacher. You are able to redo any part of the quiz to improve your results if you want to – note the highest results are recorded if a quiz is retaken
- Participate in online discussions which will be on issues surrounding the content that you have already read
- Other small activities on occasions

When you come to class we will be doing activities which assume that you have done your homework preparation.

You will also be asked to participate in 1 online revision quiz at the end of each week (to be done over the weekend). This quiz will cover all previous work completed on the course. Students with the highest results will be publicised on the front page of the course site.

CAN YOU CHANGE YOUR MIND AND WITHDRAW FROM THE PROJECT?

Unfortunately you cannot withdraw from the in-class part of the project because your whole class is involved. If access to broadband internet cannot be resolved then you will be provided with a textbook and some other resources so that you are not disadvantaged. You will however be expected to attend class and participate in all activities.

You can however choose to withdraw from the research aspects of the programme at any time. This means that any of your online work or data would not be used in the research project.
WHAT DATA OR INFORMATION WILL BE COLLECTED AND WHAT USE WILL BE MADE OF IT?

The only people to have logon access to the course site will be me, Mr Fountain and members of the class. No student will be able to access the grades or submitted work of other students in the class. The only time that you will see other students’ results is in the weekly quiz in which only the top handful of results will be visible on the front page of the site.

1. All activity on the course site will be accessed by me to gather data for my research. All students will remain anonymous and referred to as Student A, Student B, Student C, etc. in my research project report. On occasions I will be asked by other teachers to show them what sort of activities that we have done in the course. This may include a glimpse of parts of the course site. I will also be presenting to teachers conferences later in the year. Again a glimpse of parts of the course site may occur – Students names and photos will on these occasions be visible but only to fellow educators. I will endeavour to keep student identities as confidential as possible on these occasions.

2. The class will be video recorded once per week (7 times total). The video recording will be used by me to gather data for my research. Again student identities will remain anonymous. I intend to edit a short video clip of class activity to help in my presentation to the teachers conferences mentioned above.

3. Groups in the class will be audio recorded on occasion. The same applies as to video recordings (above).

4. I will be selecting 6 students from a range of ability across the entire class. These students, if they agree, will be interviewed once or twice (video or audio recorded) to help gather further information for my research project. I may ask to use part of the recording in my presentation to teachers’ conferences but only if given permission directly by the student concerned.

5. Class Quiz results will be used in my research and may also become part of my presentation at teachers’ conferences. Students will remain anonymous with names removed. The class will however be referred to as a Wellington College Year 11 History class.

6. It was my experience last year that some students’ parents were interested in what their son was doing in the online part of the course. I am unable to limit what parents can see of other students work unless you agree to use your common sense as you will be the ones giving them access.

7. Mr Fountain will be observing and taking notes in some lessons. I will also be interviewing Mr Fountain at the end of the unit. His observations will be used in my research project and again students’ identities will remain anonymous.
WHO ARE THE FACILITATORS?

The study fellowship is overseen by Core Education which is funded by the Ministry of Education. The Core Education contact for this project is:

Dr. Vince Ham
Director of Research
Core Education
P.O. Box 13 678 Christchurch
Phone: 03 379 6621
Mobile: 021 999 147
Email: vince.ham@core-ed.net

Core Education Website: http://home.core-ed.net/

WHAT IF I HAVE ANY QUESTIONS?

If you have any questions about this project, either now or in the future, please feel free to contact:

Mark Callagher
Elearning Fellow 2008
History, Mathematics & Computer Studies Teacher
Wellington College
Mobile: 021 575 840
Email: markcallagher@clear.net.nz

The ethical procedures outlined for this project have been reviewed and approved by CORE Education Ethics Committee.
<table>
<thead>
<tr>
<th>Sub Questions</th>
<th>Indicators</th>
<th>Data Sources</th>
<th>Sampling</th>
</tr>
</thead>
<tbody>
<tr>
<td>How interactive are the online sessions?</td>
<td>• Frequencies of interactions</td>
<td>• Forum Archive</td>
<td>• Choose a range of 4 Forum Discussion Topics</td>
</tr>
<tr>
<td>How often do they interact?</td>
<td>• How long did threads last in forums?</td>
<td>• Forum Archive</td>
<td>• A range of 4 Forum Discussion Topics (same as above)</td>
</tr>
<tr>
<td>How extended are the interactions – time period?</td>
<td>• Size of forum postings</td>
<td>• Forum Archive</td>
<td>• A range of 4 Forum Discussion Topics (same as above)</td>
</tr>
<tr>
<td>How substantial are the interactions?</td>
<td>• Number of student responses</td>
<td>• Forum Archive</td>
<td>• A range of 4 Forum Discussion Topics (same as above)</td>
</tr>
<tr>
<td>What do they interact about – content?</td>
<td>• What historical content - eg Hitler invading Poland</td>
<td>• Forum Archive</td>
<td>• A range of 4 Forum Discussion Topics (same as above)</td>
</tr>
<tr>
<td>What forms do the interactions take?</td>
<td>• The contestability of forum stimulus questions.</td>
<td>• Forum archive</td>
<td>• A range of 4 Forum Discussion Topics (same as above)</td>
</tr>
<tr>
<td>Who do they interact with?</td>
<td>• Teacher-Student</td>
<td>• Forum Archive (make sociograms or other method)</td>
<td>• A range of 4 Forum Discussion Topics (same as above)</td>
</tr>
<tr>
<td>What level of thinking is involved in the interactions?</td>
<td>• How reflective are they (use SOLO Taxonomy)</td>
<td>• Forum Archive</td>
<td>• A range of 4 Forum Discussion Topics (same as above)</td>
</tr>
<tr>
<td>What level of participation is there with the content</td>
<td>• How often are readings and comprehension quizzes completed</td>
<td>• Moodle Admin tools</td>
<td>• Whole Unit</td>
</tr>
<tr>
<td>Level of understanding of content</td>
<td>• To what level do the students comprehend the content</td>
<td>• Moodle Admin tools – quiz results</td>
<td>• Whole Unit</td>
</tr>
</tbody>
</table>
## Interactivity in Class (face-to-face)

<table>
<thead>
<tr>
<th>Sub Questions</th>
<th>Indicators</th>
<th>Data Sources</th>
<th>Sampling</th>
</tr>
</thead>
<tbody>
<tr>
<td>How interactive are the face-to-face sessions?</td>
<td></td>
<td></td>
<td>During the class sessions – 4 periods/hours over the whole unit [4 weeks] to get a variety of different class activities.</td>
</tr>
<tr>
<td>How often do they interact?</td>
<td>• Frequencies of interactions</td>
<td>• Video/audio recording</td>
<td>Compare interactions to previous unit with 1-2 teacher interviews during and after topic.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Teacher interview</td>
<td>Focus group interview with 4-6 students.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Student Focus Group interview</td>
<td></td>
</tr>
<tr>
<td>How substantial are the interactions</td>
<td>• Number of students involved</td>
<td>• Video/audio recording</td>
<td>During the class sessions – 4 periods/hours over the whole unit [4 weeks] to get a variety of different class activities.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Teacher interview</td>
<td>Compare interactions to previous unit with 1-2 teacher interviews during and after topic.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Student Focus Group interview</td>
<td>Focus group interview with 4-6 students.</td>
</tr>
<tr>
<td>What do they interact with?</td>
<td>• Cartoon resource, video, text resource, handout etc</td>
<td>• Video/audio recording</td>
<td>During the class sessions – 4 periods/hours over the whole unit [4 weeks] to get a variety of different class activities.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Teacher interview</td>
<td>Compare interactions to previous unit with 1-2 teacher interviews during and after topic.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Student Focus Group interview</td>
<td>Focus group interview with 4-6 students.</td>
</tr>
<tr>
<td>What do they interact about – content?</td>
<td>• Historical content - eg Hitler invading Poland</td>
<td>• Video/audio recording</td>
<td>During the class sessions – 4 periods/hours over the whole unit [4 weeks] to get a variety of different class activities.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Teacher interview</td>
<td>Compare interactions to previous unit with 1-2 teacher interviews during and after topic.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Student Focus Group interview</td>
<td>Focus group interview with 4-6 students.</td>
</tr>
<tr>
<td>What forms do the interactions take?</td>
<td>• Questions, analysis, arguing point of view, responding to a point of view etc</td>
<td>• Video/audio recording</td>
<td>During the class sessions – 4 periods/hours over the whole unit [4 weeks] to get a variety of different class activities.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Teacher interview</td>
<td>Compare interactions to previous unit with 1-2 teacher interviews during and after topic.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Student Focus Group interview</td>
<td>Focus group interview with 4-6 students.</td>
</tr>
<tr>
<td>Who do they interact with?</td>
<td>• Teacher-Student</td>
<td>• Video/audio recording</td>
<td>During the class sessions – 4 periods/hours over the whole unit [4 weeks] to get a variety of different class activities.</td>
</tr>
<tr>
<td></td>
<td>• Student-Student</td>
<td>• Teacher interview</td>
<td>Compare interactions to previous unit with 1-2 teacher interviews during and after topic.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Student Focus Group interview</td>
<td>Focus group interview with 4-6 students.</td>
</tr>
<tr>
<td>What level of thinking is involved in the interactions?</td>
<td>• How reflective are they (use SOLO Taxonomy)</td>
<td>• Video/audio recording</td>
<td>During the class sessions – 4 periods/hours over the whole unit [4 weeks] to get a variety of different class activities.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Teacher interview</td>
<td>Compare interactions to previous unit with 1-2 teacher interviews during and after topic.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Student Focus Group interview</td>
<td>Focus group interview with 4-6 students.</td>
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# APPENDIX 6 – FORUM ANALYSIS TABLES

<table>
<thead>
<tr>
<th>Day:</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
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<td>2</td>
<td>0</td>
<td>0</td>
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<td>0</td>
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<td>0</td>
<td>0</td>
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<td>Forum 2</td>
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<td>0</td>
<td>3</td>
<td>4</td>
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<td>0</td>
<td>1</td>
<td>2</td>
<td>4</td>
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<td>5</td>
<td>1</td>
<td>15</td>
<td>2</td>
<td>3</td>
<td>6</td>
<td>2</td>
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<td>Forum 4</td>
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<td>6</td>
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<td>1</td>
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<td>0</td>
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<td>3</td>
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<tr>
<td>Forum 5</td>
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<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>0</td>
</tr>
<tr>
<td>Forum 6</td>
<td>3</td>
<td>2</td>
<td>9</td>
<td>4</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
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<td>0</td>
<td>0</td>
</tr>
<tr>
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<td>5</td>
<td>8</td>
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<td>1</td>
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<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Forum 8</td>
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<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>1</td>
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<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Forum 9</td>
<td>6</td>
<td>4</td>
<td>1</td>
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<tr>
<td>Forum 10</td>
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<td>0</td>
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<td>0</td>
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<td>0</td>
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<td>0</td>
</tr>
<tr>
<td>Forum 11</td>
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<td>2</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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</tr>
<tr>
<td>Forum 12</td>
<td>6</td>
<td>6</td>
<td>0</td>
<td>31</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>0</td>
</tr>
<tr>
<td>Total for all forums</td>
<td>100</td>
<td>38</td>
<td>29</td>
<td>71</td>
<td>11</td>
<td>6</td>
<td>12</td>
<td>9</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Percentage</td>
<td>35.0%</td>
<td>13.3%</td>
<td>10.1%</td>
<td>24.8%</td>
<td>3.8%</td>
<td>2.1%</td>
<td>4.2%</td>
<td>3.1%</td>
<td>0.3%</td>
<td>1.0%</td>
<td>0.7%</td>
<td>1.4%</td>
</tr>
<tr>
<td>Total w/out forums 1, 2, 12</td>
<td>42</td>
<td>32</td>
<td>24</td>
<td>34</td>
<td>8</td>
<td>6</td>
<td>12</td>
<td>8</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Percentage</td>
<td>25.0%</td>
<td>19.0%</td>
<td>14.3%</td>
<td>20.2%</td>
<td>4.8%</td>
<td>3.6%</td>
<td>7.1%</td>
<td>4.8%</td>
<td>0.6%</td>
<td>0.6%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>
APPENDIX 7 – STUDENT QUESTIONNAIRE RESULTS

### IMPACT OF BLENDED LEARNING

#### Questions: 4 point scale labels

<table>
<thead>
<tr>
<th>Question</th>
<th>4 pt</th>
<th>Average</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>To what extent enjoy experience of blended learning</strong></td>
<td>0=not at all, 2=a little, 4=a lot</td>
<td>2.8</td>
<td>70%</td>
</tr>
<tr>
<td><strong>To what extent blended learning helped understanding content more than taught normally</strong></td>
<td>0=not at all, 2=a little, 4=a lot</td>
<td>2.4</td>
<td>59%</td>
</tr>
<tr>
<td><strong>To what extent did you complete online preparation work</strong></td>
<td>0=not at all, 2=a little, 4=over 90%</td>
<td>2.8</td>
<td>69%</td>
</tr>
<tr>
<td>After prep work completion, did understanding of what covered in class improve</td>
<td>0=not at all, 2=a little, 4=a lot</td>
<td>3</td>
<td>74%</td>
</tr>
<tr>
<td>After prep work completion, were you more involved in class than usual</td>
<td>0=not at all, 2=a little, 4=a lot</td>
<td>2.2</td>
<td>55%</td>
</tr>
<tr>
<td>Did you feel more motivated to find out more when doing online work</td>
<td>1=yes, 0=no</td>
<td>0.7 *</td>
<td>70% *</td>
</tr>
<tr>
<td>In end year exams, how likely you will use WW2 topic to answer question</td>
<td>0=very unlikely, 2=maybe, 4=very likely</td>
<td>2.5</td>
<td>62%</td>
</tr>
<tr>
<td>How much more than usual did you interact with other students by doing the blended learning style</td>
<td>0=less, 2=about the same, 4=a lot more</td>
<td>2.7</td>
<td>67%</td>
</tr>
<tr>
<td>How knowledgeable do you now feel about the WW2 topic</td>
<td>0=not very, 2=average, 4=very</td>
<td>2.7</td>
<td>68%</td>
</tr>
</tbody>
</table>

* A yes/no question