

Research Article

Motivated for Learning? The introduction of e-portfolios to level 1 students in a Further Education college

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Abstract

This study examines the impact of the use of IT on the results and achievements of a group of Level 1 students. The study looks at models for learning, and the impact of curriculum modelling and learning networks within the classroom (as a form of communities of practice). It also examines the effect on student achievement that the introduction of online portfolio building brings. Using constructivist grounded theory the research sought to examine student results using an online virtual learning environment (VLE) as opposed to a paper based system and how this might be used as an indicator of motivation. Initial results suggest a significant improvement in submission times as well as students taking more ownership of the tracking and completion of their work and apparently being motivated to complete work more quickly and effectively. This is an initial study; findings from this project could form the basis of further research into the formation of learning networks, communities of practice amongst Further Education students and the impact of their education experience on learning identities.

Keywords: *virtual learning environment; learning networks; communities of practice; constructivist grounded theory*

Introduction

This paper examines the move from a paper based portfolio to an online portfolio. The project was focused on two main research objectives:

- To examine the effect of the introduction of online portfolio building on student results

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- To consider factors that may enhance student experience and may increase motivation as measured by results.

This took place in a Further Education (FE²) College in the North of England (the College).

The research questions were:

- Can e-portfolios improve student results?
- Do online portfolios allow students to track their work more effectively than paper based portfolios?
- Does the use of e-portfolios and VLEs encourage students to complete work more rapidly?

In June 2010 the decision was taken to move from providing a BTEC Level 1 qualification to providing a NOCN Level 1 qualification at the College³. In the first year most of the students' work was stored in their personal computer space on the College network. This work was then printed off and presented as a paper-based portfolio. Frequently students would forget to print off work at the time of production and work would be lost or accidentally deleted. Maintaining physical storage space for printed student work was costly and impractical. During the year student work had to be stored within the staff room until students had achieved the qualification. Then costly archiving space had to be found to store student work for at least five years as this was a requirement of the exam boards. In the two years prior to this study it had been suggested that using the VLE and the transfer to e-portfolios for Level 1 students would be a productive and useful progression for both students and staff. Some of the lecturers who were responsible for teaching the Level 1 felt that many of the Level 1 students would find using the College VLE too stressful and would not complete their work in a timely manner. The curriculum leader expressed the opinion that Level 1 students would not be able to produce the portfolios successfully.

By contrast it was felt by some lecturers that not allowing Level 1 students to use the VLE limited their participation at college. With the introduction of the new qualification, the curriculum leader decided to use the web design module to allow students to developing their use of e-portfolios. This did not create any extra work for the students as they were required to produce web pages for their qualification. In some ways this actually reduced the students'

² Further Education is education which occurs after compulsory education in the United Kingdom. It usually has a strong vocational focus in contrast to the university system which tends to have a more academic focus.

³ BETEC and NOCN are examination boards in the United Kingdom. Level 1 would be considered to be a level significantly below that of a Baccalaurèat in Europe. Level 2/3 BTEC is equivalent to a Baccalaurèat.

workload as they were not required to select a subject for the development of their web pages. They therefore transferred their work into a digital format.

The internal verification system at that time did not accommodate or accept the e-portfolio format. Students were obliged to produce both paper and online versions of their portfolios. An initial (Phase One) study was conducted to assess the students' reactions to both the paper and online portfolio systems. This study consisted of observing students, interviews, case studies and results collection. This was a small-scale research project carried out as part of an ongoing process to attempt to reform the delivery and internal verification of the Level 1 course.

Subsequently, in the next academic year, a new curriculum leader was appointed for the Level 1 provision, after the promotion of the current curriculum leader to Deputy Head of Department. The new curriculum leader was also a Moodle expert and advocated and fully supported the development of e-portfolios and wanted all work to be submitted online and stored in Moodle, the College VLE. An e-portfolio program which linked to the VLE used by the college and exported the student's work into an e-portfolio format was introduced.

Professional and informal links with the Internal Verification (IV) team were actively developed. Discussing the concerns and cultivating good working relationships with the IV team meant that there was a more positive and constructive dialogue. The concerns of the IV team were discussed and their issues addressed. By informing and working with the IV team and understanding their concerns the teaching team was able to appreciate the problems that the IV team felt that they were facing. This dialogue led to mutual understanding and appreciation of issues on both sides. Long-term this meant that the objections to the e-portfolio system were now resolved. This also meant that students would be able to submit their work via the e-portfolio system which had been introduced.

The college is located in an area which has experienced significant deprivation and student results from school are below national average. Participation in online learning, allows individuals to practice or be part of what is becoming, a digital world. Numerous authors have referred to the key role of ICT as a means to promote participation in education and lifelong learning, the way students use ICT has also been examined. Examples include Devins, Darlow and Smith (2002), who examine the impact of digital exclusion, Gee (2003

and 2005) discusses the impact of games as a means of devising systems of learning whilst Merchant (2007 p 118) refers to the 'changing landscape of communication' and the 'growing distance between everyday literacy practices and schooled literacy'. Through their use of e-learning in class students are not only using ICT they are participating in a social learning experience.

Salmon's 5 stage model (1997 and 2004) was used comparatively to examine the ARCS model of course construction by Keller and Suzuki (2004). This model emphasises student motivation, engagement and participation in the course. This view of learner centred activity supports e-portfolios rather than paper-based portfolios as a means of improving student interest engagement and motivation. Initially research looked at an example of a current European pilot project MOSEP as discussed in Attwell et al. (2007). The reason why MOSEP was examined emerged from initial interviews with students where motivation or lack of motivation was identified as a key factor in ensuring completion of the course.

Theoretical Positioning and Methodology

According to Grix (2002, p177) ontology is 'the starting point of all research, after which one's epistemological and methodological positions logically follow.' He also states that ontology is 'about what we may know.' The adoption by the author of a social constructivist, relational viewpoint (Gergen (2009), Handley et al. (2006) Watson, (2001), Driver et al., 1994)) allows for the maintenance of the view that a significant proportion of the course is influenced and constructed by the students themselves. The success of a learning experience depends on the quality of the interaction between individuals. Driver et al. (1994, p7) state:

'Making meaning is thus a dialogic process involving persons-in-conversation, and learning is seen as the process by which individuals are introduced to a culture by more skilled members.'

Although there may be successful 'outcomes' in that students will 'achieve', without the creation of a successful shared meaning within the context of the course, it is in the opinion of the author, questionable as to whether learning has taken place.

The use of computers is a vital skill in the modern world. The ability to use computers effectively and to understand, to some extent, how they work allows individuals to be able to

fully participate, in what is becoming, not just a localised but globalised digital world, where there is also viewed to be a digital divide. This divide is not just in terms of physical access to the technology but can extend to 5 dimensions.

'The first is variation in the technical means (hardware and connections) by which people access the Web. The second is variation in the extent to which people exercise autonomy in their use of the Web – for example whether they access it from work or home, whether their use is monitored or unmonitored, or whether they must compete with other users for time on-line. The third is inequality in the skill that people bring to their use of the Internet. The fourth is inequality in the social support on which Internet users can draw. The fifth is variation in the purposes for which people use the technology.' DiMaggio and Hargittai, (2001, p8)

The students at the College tend to be those who were less successful, both academically and socially. The College gives them the opportunity to improve the skills they did not have the opportunity to improve within a traditional school environment. Improving their computing skills allows them better opportunities to be fully functioning members of a modern society. According to Gergen (2009) we live in a connected world and we construct meaning from our social interactions as well as our internalised processing of our thoughts.

The results from the study have been triangulated by using a variety of research methods, including quantitative data. It is recognised that there are virtually no studies which can be said to be totally unbiased but it is considered that recognition of one's own position, postionality and the use of a variety of data collection methods reinforces the validity of the project. During the study, a brief examination of the phenomenological approaches as outlined in Gibson and Hanes, (2003), and Theodoridis (2007) took place. This promoted a heightened awareness of the possibility of subjective judgements being made. A decision was made to include quantitative as well as qualitative data. The quantitative data (student unit results) are used as a direct measure of any changes to results. The course recruitment criteria and the learning outcomes for the units recorded remained the same between the initial investigative initial study and the project. This quantitative data supports the research question that students complete units more rapidly when using a VLE. The quantitative data is internally and externally verified, confirmed by the curriculum leader and the exams unit within College and therefore can be seen to be objective. Although success rates were only

marginally improved (success rates on the Level 1 course during the initial study were 86% and at the end of the project were 91%) having the combination of interviews, case studies and observation means that comparisons of perceptions and data can be made to consider what added value using a VLE brings to the student learning and experience.

The focus for the project and the focus of the literature reviewed is online study. The use of a VLE means that teaching and learning are taking place and evidenced online. Although staff and students are within the same room, the use of a VLE means that a proportion of the learning environment and process will be following an online model. Salmon (2004) has proposed a model to explain the process of online learning. Successful online learning according to Salmon is a five stage process (see Figure 1).

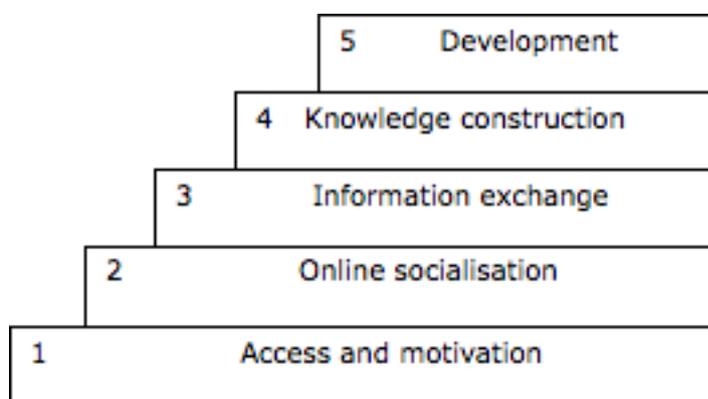


Figure 1: The 5 Stage Model of Teaching and Learning Online (adapted from Salmon, 2004, p29)

In Salmon & Giles (1997) the conclusion is that a ‘structured and deliberate training programme is a necessary foundation upon which to build successful learning outcomes’ (p10) and that lecturers need to have ‘knowledge of how to undertake the delicate but important role of facilitating active knowledge construction between collaborative groups of students on line.’ This is supported by Kear (2007 p13) who states that online learning environments should ‘be clearly organised into separate areas of interest, and moderators should help keep discussions on topic.’

The literature reviewed examined models in curriculum design; and was an ongoing process aligning with the methodology of grounded theory.

Grounded theory

Grounded theory was the key methodology chosen for the study in preference to action research. The similarities and differences between action research and grounded theory were considered and examined. According to Dick, in Bryant and Charmaz (2007) 'Grounded theory and action research are not usually regarded as similar indeed there are important differences' (p398) He states that both developed theory which is 'grounded in specific evidence' and that 'both are capable of being used flexibly and responsibly'. Their differences suggest ways in which each might be enhanced.

Grounded theory is more explicit about how theory is built from evidence. Action research might well emulate this but action research is more explicit about how understanding past studies informs action and sometimes may interpret information more efficiently. Charmaz states that 'neither data nor theories are discovered. Rather we are part of the world we study and the data we collect. We construct our grounded theories through our past and present involvements and interactions with people, perspectives and research practices.' (Charmaz, 2006 p10).

Because the author was involved in the delivery of the course she felt that grounded theory was an appropriate method and methodological standpoint to adopt.

Having provided a background to the study the findings of the study and process of the collection of data will now be examined.

Findings of the Research

The study was comparative and the purpose of the study was to see if working online and creating online portfolios enhanced student motivation. The initial (Phase One) group used the traditional paper based portfolios. The Phase Two group were using the VLE/web based resources and uploading their work to the web.

As has been outlined a variety of qualitative data collection methods were used. Interviews, case studies and observations of the class informed the core categories from which the final conclusions were derived.

Although the students placed great importance on their social interactions and the formation of social relationships and friendships, this socialisation was not unrelated to their study on course. Students frequently used social interaction and 'learning friendships' to learn from each other. The process of peer learning also provided opportunities to strengthen these 'learning friendships'. Over a comparatively short time these 'learning friendships' developed into more social relationships and into friendships away from learning situations. The two groups of students demonstrated significant differences in terms of their developing social patterns and interaction with each other, although they also shared significant similarities in the importance which they placed on socialising and social interaction, this was clearly demonstrated across both groups. This socialising was not just the forming of friendships within the group this also extended to social learning. The creation of meaning within these social contexts and within the groups formed an important part of the learning process for both the initial study (Phase One) and the research group (Phase Two).

Data Collection

The use of observation and interviews is combined with quantitative data on completion and achievement dates for comparable units before and after the introduction of e-portfolios. Constructivist grounded theory gains information from a variety of sources where interviews are a valuable data source. Students were interviewed during both phases of the study and the author made extensive use of mind maps in gathering field data and the coding process. This has allowed the categories and subcategories to be clearly identified and for links to be made which enhanced the coding process. The Phase One study provided data about the course using a paper based model. The ability to compare the Phase One and Phase Two results provided useful additional data and information. Phase One provided valuable comparative information to the main Phase Two project.

As a primary data collection method, interviews were closely examined within the study. Informal conversational interviews combined with the interview guide approach were deemed to be the most appropriate format. This allowed data to be gathered without the bias which may result from a set interview process or interview script. Students were observed in the class, how they made use of the VLE, their conversations and social interactions around the VLE. The first group consisted entirely of male students. In Information Technology (IT) there is still a predominance of male students. Most of the students had multiple social and

learning issues. There were 28 students in the second group and, unusually for IT at the college, a significant proportion of female students. Key notes were taken and themes were identified from the interviews and were transferred into mind maps showing emerging themes.

Observations were undertaken while students worked on IT based assignments, activities and tasks. Students were allowed significant freedom of access to the Internet. The majority of students chose to access Facebook and to chat to students in class and in other classes in the college whilst also working on allocated tasks. , Contrary to popular belief, this was found to enhance rather than distract from concentration for most students. Students appear to be concerned and spend significant amounts of time worrying about what is happening on Facebook if they are not allowed to access the site. Allowing them to access Facebook means they are less distracted, more able to focus and work on tasks. However, this does have to be monitored to ensure that students are also working effectively.

The two groups of students demonstrated significant differences in terms of their developing social patterns and interaction with each other, although they also shared significant similarities in the importance which they placed on socialising and social interaction. Adopting grounded theory meant that during analysis of the data the following categories emerged from interviews, field notes and observations of students within class. These are outlined in the next section.

Analysis and Categories

The Phase One study group differed from the Phase Two group in that they placed more explicit significance to the social element of the course. They demonstrated many complex and challenging behaviours because of their social and medical histories. They had far more overt concern with their development of and position within the social hierarchal structure within the class. They also felt it necessary to, at times, be both disruptive and challenging. It is the opinion of the author that they were testing boundaries to possibly reinforce their perceived reality and their constructed environment.

Phase One

Adopting a grounded theory approach meant that during analysis of the data gathered the following categories emerged from analysis of interviews, field notes and analysis of observations of students.

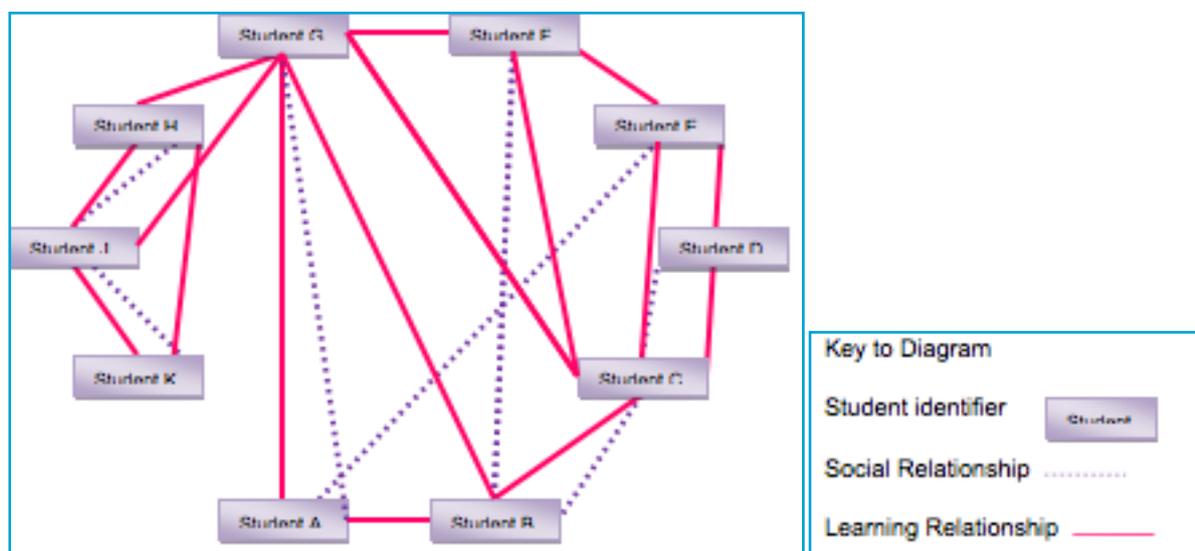


Figure 2: Learning Network Diagram (Phase One)

Phase 1 categories developed

Socialise: Students used the word socialise to refer to the socialisation which takes place specifically related to college and college work. Subcategories of this category included: *face to face*; and *online socializing*.

Learning: Learning was closely associated to the process of learning to use software, which is why the sub category software is placed here. This included: *software*; *contextualized*; and *ascribing meaning to*.

Socialising: The category socialising is defined as the process of interacting on a social level unrelated to college work.

Using Computers: Using computers was an important part of student development on the course and divided into two further subsets: *developing skills set*; *experimenting* (with computer software)

Thinking Processes: Students considered that ‘thinking’ was separate from learning. Their concepts of thinking were: *contextualising*; *reflecting*; and *visualising*.

Making Personal Meaning: students felt that it was important that they had their own way of learning and retaining information. The use of journals and free expression in their website designs enhance this process.

Recording: students felt that physically recording what they had done was important to them. They expressed themselves in two forms: *text*; and *imaging*.

Networks: Phase One students did not specifically refer to their learning networks, during the periods of observation network diagram one was mapped. Phase One students did not establish the rich relationships established by Phase Two students (see Figure 2).

Phase One Conclusions

Although an attempt was made to focus on paper-based portfolio building within the initial study, it quickly emerged that students were clearly more motivated when they were able to work on computers. Students felt ‘it was easier’ and ‘I enjoyed it more’ when they worked on computers. Students clearly felt more comfortable using computers for the work. They frequently asked ‘why can't we keep all this on computer’. When they had to print their work off some of the students wasted hundreds of pages of paper because they could not focus on what they were doing and they were not interested in the ‘bits of paper which mean nothing’ in contrast a few other students valued the opportunity to be able to print off their work and retain copies of their work.

Phase Two

The research project group was a larger group of students divided into two classes. The following categories were created during interview, observation and the taking of field notes, several categories were similar to the Phase One group although they had their own unique nuances as can be seen below.

Phase 2 categories developed

Learning: The majority of the students felt that learning something whilst at college was ‘the most important reason why they were here’. This category had two distinct subcategories: *ascribing meaning to*; and *Networks – creating learning networks*.

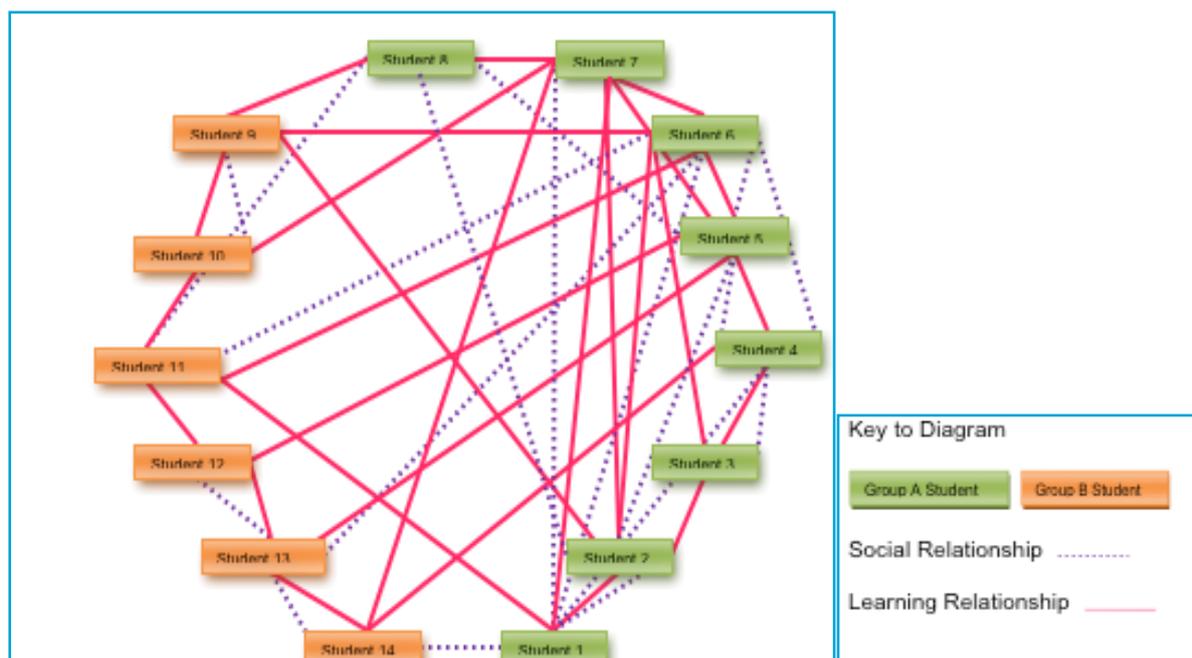


Figure 3: Learning Network Diagram (Phase Two)

Software: A particular area of interest for students was developing their skills in using the software on the computers. There was a recurring sub category linked to this topic: *software – developing software skills* was considered important by both of the research study groups.

Using Computers: Also important to the students was developing their skills using computers. The sub categories for these were: *developing skills set*; and *experimenting*.

Thinking Processes: Again students felt that they spent time reflecting on and thinking about their learning. This was primarily an individual, internalised process which the students referred to primarily different forms of: *visualizing*; and *imagining*.

Making Meaning: Students had distinctly separate categories related to thinking and making meaning. Making meaning was the group process of analysing what they had learned and arriving at a consensus as to the significance and meaning of what they had learnt. These were divided into two separate forms of meaning making: *social*; and *individual*.

Recording: Again for students the ability to record what they were doing was an important part of learning for them. They performed this recording in two ways: *writing*; and *imaging*.

Socialising: Socialising was perceived as one category by the Phase Two group. Unlike the Phase One group they interwove their college work into their general social discussions:

- *speaking* – the process of verbal socialisation enhanced motivation;
- *listening* – students listened carefully to each other, but did not always listen to the lecturer when they were socialising within class. Students appeared to have a system

whereby one student would listen to the tutor and could convey what had been said to students who had missed instructions.

- *discussing* – students spent significant amounts of time discussing work they had uploaded onto Moodle even within a social setting.

Phase Two Conclusions

The study has shown that using the VLE does seem to engage students to complete work quicker and more effectively. The Phase Two group developed more learning and social relationships which seemed to assist them in their learning (see Figure 3). Although the online environment was constructed to ensure student privacy learners within the study tended to share lecturer comments and their results on Moodle more than Phase One students. From observation it is possible to see this encouraged not only competition among students it also facilitated peer support within the group.

The purpose of the quantitative samples was to support and enhance the qualitative data. In January 2012 Phase Two students had completed over 50% of the total work required for the modules which form part of the study. This compares to the Phase One results where less than 5% of the work had been recorded as having been completed at that stage. The analysis of graphs for the two years showed a dramatic reduction in completion times for the compared units. Combined with the interview comments and results this reinforced the emerging view that students are more motivated to succeed when they are provided with visual progress cues and the interactive environment within the VLE.

In Phase Two there was no need for lecturers to spend time repeatedly explaining to students why they had to complete the portfolios or to allocate time for students to work on their portfolios. Lecturers had time to enhance the learning experience for the students.

Overall Conclusions

Here the aims of the study are evaluated, and whether those aims were met will be now examined. The Phase Two study examined the effects on student results from the introduction of online portfolio building. The Phase One study acted as a benchmark for these results to be measured against. The dramatic reduction (over 50%) of time taken to complete portfolios clearly demonstrates that by removing the barrier of paper-based portfolio building improves results. It is recognised that other factors could have contributed to this

reduction of time taken, which is why students were interviewed, and the comments and opinions of students reinforced that online portfolio building was considered to be effective, more engaging, more interesting and did improve the results. There is little doubt that using the VLE for uploading work has benefited the students.

The College benefitted from the results of this study as it confirmed the following:

Academic benefits

- The value of using a VLE for assessment
- The advantage of having student completed work in one place transparent and accessible by all
- The ability to know how well students are progressing without relying on tracking sheets which may not be completely 'up-to-date'.

Financial benefits

- The saving of money spent on: resources and materials

In the future introducing forums and blogs to Level 1 students would allow them to continue to develop their community of practice. One of the key interests of the author is how students' identities develop over time. How students interact together and may participate in communities of practice forms part of this interest, which the author is hoping to pursue in further studies.

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