

The Dialogic Potential of ePortfolios: Formative Feedback and Communities of Learning Within a Personal Learning Environment

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This paper reports on the findings of a study into the use of ePortfolios as personal learning environments (PLE) by a group of students pursuing Master's degrees in Education. The qualitative study explores the potential of the ePortfolio to support learners in engaging in formative peer and tutor feedback as well as in developing a learning community. Within this study, the ePortfolio is presented as an alternative to the discussion forums based in the institutional virtual learning environment (VLE), as it combines the individual, reflective benefits of the PLE with the communal, social benefits offered via the discussion forums. Data were collected of the interactional content that students created through the ePortfolio (blog posts and responses to others' posts) as well as through a focus group interview with the participating students that explored the learners' perceptions of the ePortfolio as a support mechanism for their study on a specific module. The findings of the study indicate that while in many ways learners' online interactions through the ePortfolio were similar to those described in VLE discussion forums, there were several key advantages to positioning this dialogue within a PLE, including encouraging deep rather than surface approaches to learning and providing the opportunity to construct a personal and re-traceable narrative of the individual's learning journey.

This paper reports on the findings of an action research study exploring the potential benefits of using an ePortfolio tool as a support mechanism for teaching and learning in a Master's program in Education. It is argued that the ePortfolio tool introduces essential affordances for student learning that are not as readily available through an institutional virtual learning environment (VLE) discussion forum. The paper takes the perspective that a learner-centered approach using continuous dialogue is necessary to support learners studying in blended format courses (i.e., those courses that implement both face-to-face and fully online components). In addition, the need for the learning environment to contribute to the development of a community of practice is discussed.

The action research methodology of the study is discussed, which focuses on analyzing the interactional content which learners have produced within the ePortfolio in the process of giving and receiving formative feedback from peer and tutor and reflecting on their academic practice. The findings of the study discuss the ePortfolio as a personal learning environment (PLE), which allows the learner to develop a reflective narrative of his or her learning journey. The benefits of developing such a narrative are seen as encouraging a deep approach to learning and as supporting the essential processes of reflection in action. The principles of successful online community building as outlined by Preece (2000) and Salmon (2011) are examined in the context of the ePortfolio. An exploration of the literature has led to a better understanding of where the differences are in terms of organizing support for community building and formative feedback for learners working within a PLE context.

Literature Review

Contemporary teaching and learning practices increasingly involve e-learning environments alongside traditional face-to-face delivery. Given the increasing use of technology in learning and teaching, it is imperative for educators to consider carefully with what purpose technology is being used in teaching practice and with what benefit to the learner. The effects of the technological push (Collis & Moonen, 2001) have to be minimized in order to give way to the careful planning of teaching and learning with a primary consideration for the learner's needs. Current thinking in this area has shown that the use of technology does not automatically lead to better learning or improved understanding; rather, recent studies suggest that the use of information and communication technologies in a pedagogical context emphasize the need for more human contact as an integral part of the teaching and learning process (Njenga & Fourie, 2010). This perspective necessitates a careful consideration of blended learning approaches (Littlejohn & Pegler, 2007), which combine the valuable aspects of face-to-face interaction with those of online interaction in an attempt to more fully meet the needs of learners. Authors and practitioners now discuss the pedagogical dimensions of e-learning and blended learning with relationship to the learner's experience and the learner's needs (Jones & Lea, 2008; Laurillard, 2002; Matusov, Hayes, & Pluta, 2005). This further highlights the value of peer support and interaction as well as the need to consider the holistic learning community with which the learner interacts throughout his or her academic practice. A move towards a learner-centered approach, based on continuous dialogue between learner, peers, tutor, and

the broader community of practice is necessary. The learning environments within which these interactions take place must be flexible, learner-centered, and allow for dialogic interaction in order to fully support the learner.

Learner-Centered Pedagogy and Learner-Centered Tools

Effective use of e-learning technology requires an underlying pedagogical approach, which is ideally learner-centered and allows for a continuous dialogue to evolve between learner and tutor (Laurillard, 2002). Such learner-centered approaches emerge from social constructivist pedagogy, articulated by Vygotsky (1978) as the idea that dialogue, guidance, feedback, and social interactions are drivers for transforming potential development into actual ability. Lave and Wenger (1991) developed this concept further to identify that socially supported learning happens in communities of practice; learning is seen not as a single act of internalization but as “trajectories of participation” (p. 89) where progress in learning is evaluated through the changing roles that the individual acquires within the learning process.

The benefits of a social constructivist approach and the value of communities of practice have seen development within current learning and teaching practice through the use of discussion forums and in an institutional context within virtual learning environments (VLEs). Concurrently, web 2.0 technologies have made available a host of learning tools that afford a deeper level of personalization than that offered by VLEs (Brown, 2010). The ePortfolio in particular can be identified as one such personal learning environment (PLE). Initially emerging as a tool for supporting “personal development planning” (Grant, Rees-Jones, & Ward, 2004), the ePortfolio has become established as a broader mechanism for reflection, communication, and planning. The Higher Education Academy (2012) defines personal development planning as “a structured and supported process undertaken by an individual to reflect upon their own learning, performance and/or achievement and to plan for their personal, educational and career development” (para. 1). This definition places an emphasis on learning as a personal journey. In this context the ePortfolio responds to the institutional need to offer a personal learning space to all learners, as expressed in the Department for Education and Skills e-Strategy (DFES; as cited in Ward & Richardson, 2005, p. 2).

Increasingly, the ePortfolio is also seen as a mechanism for sharing, communication, assessment, and feedback (JISC, 2008). The Joint Information Systems Committee (JISC; 2008) articulates the

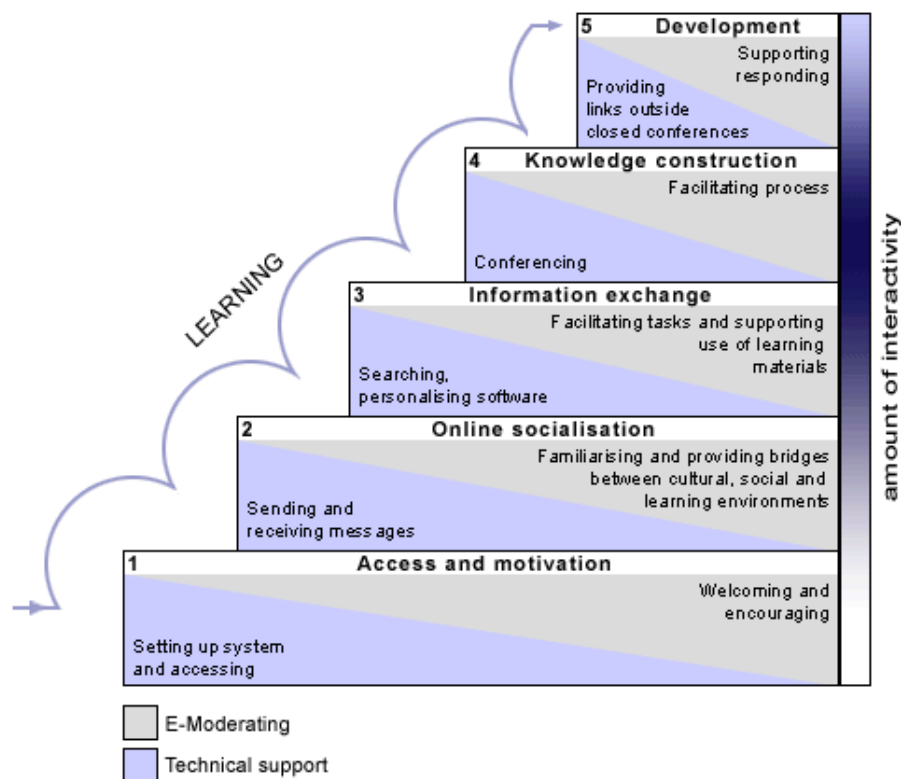
benefits of the ePortfolio both as a mechanism for developing an understanding of complex ideas and concepts and as a tool for socializing within a community of practice (p. 9). Stefani, Mason, and Pegler (2007) articulate the potential of the ePortfolio precisely as a tool for formative assessment and feedback, stating that if the portfolio use was presented to students as a way to carry out structured activities, learners would be able to use the tool to develop thinking skills and receive useful feedback in the process (Stefani et al., 2007). The benefits of a social constructivist approach to learning and communities of learning are therefore primarily a matter of effective academic practice. On the basis of the constructivist theoretical perspective (Vygotsky, 1978), it can also be argued that the capacity to implement a learner-centered approach through the ePortfolio is partly defined by its dialogic potential.

In the context of academic practice, the ePortfolio’s dialogic potential can be judged according to the nature of the dialogue and feedback that develop, whether learners are encouraged to participate, and whether this participation is meaningful and leads to knowledge construction. This makes it necessary to further consider the dialogic potential of learning environments.

Dialogic Potential and Community Building

Dialogic potential and community building are attributes that have long been associated with virtual learning environments (VLEs; Preece, 2000). Knowledge of the principles of online community building and constructive dialogue online is essential in order to be able to provide a meaningful learning experience. One of the most useful frameworks for understanding how to successfully scaffold support for online learners is Salmon’s (2011) five-stage model for collaborative online learning (see Figure 1). The model provides guidance on how to support learners’ dialogic and community building interactions online throughout the different stages in their learning journey. Salmon identifies five stages in the process of online participation, with each stage representing a different level at which the interactions and learning gradually evolve towards deeper and more meaningful forms of learning. An essential aspect emphasized in the model is the tutor’s changing role as an e-moderator, from initiating the interactions in the first few stages of the model, through gradually becoming a facilitator for the learning interactions. Concurrently, the learner’s role changes towards a progressively more active and constructive one. Salmon emphasizes that the success of the online interactions in terms of potential for learning depends strongly on this gradual scaffolding of the support, which the e-moderator provides. The

Figure 1
Salmon's (2011) Five-Stage Model for Collaborative Online Learning



(Salmon, 2004, para. 2)

author further states that the early stages of motivating learners to socialize online are essential in order to gain the benefits of active learning and knowledge construction in the later stages of interaction (stages three to five).

Similarly, Preece (2000) identifies several core attributes of successful online communities. These attributes include shared goals, access to shared resources, engagement in providing continuous support for each other and the use of shared policies (Preece, 2000). Like Salmon (2011), Preece (2000) also conceptualizes community as a “process” (p. 26), which helps to emphasize the essential aspect of students’ engagement over time and their motivation for engagement.

Other current studies on understanding community building in online forums have focused on the roles that learners adopt and the nature of the discussions in which learners tend to engage. A study by Jones and Lea (2008) indicates that in their use of discussion forums, learners adopt interchangeable roles of “supportive fellow student, as a learner in need of help, as a friend, as a person who temporarily takes the role of teacher” (p. 211). The evidence in this study suggests

that learners benefit from such interaction both ways: by providing advice to others and by receiving feedback from peers. Similarly, Preece (2000) highlights that the socialization principle within an online community requires participants to adopt different roles: “moderators and mediators . . . professional commentators . . . provocateurs who provoke, general participants who contribute to discussions; and lurkers who silently observe” (p. 83). Such role taking contributes to better participation and a stronger community.

The nature of the discussions in which learners engage has been another focus of current research, providing an insight into what motivates learners to contribute to online communities. In their study on using discussion webs to develop communities of practice, Matusov et al. (2005) developed an ontology of conversation topics. Such topics included off-subject discussions and life experiences, which collectively served a variety of purposes including encouragement, social acknowledgement, and socialization. This aspect of online participation suggests that there is a need to afford opportunities for less formal socialization in order for a community of learners to develop. This type

of engagement is further recognized in Salmon's (2011) five-stage model, which outlines that—particularly at the earlier stages of online discussion (stage two of the five-stage model, see Figure 1)—the emphasis is on socialization within the forum. This is an essential stage when the tutor as e-moderator should encourage social exchanges that build mutual trust and respect and promote the development of a community.

There are some significant differences in the way socialization and dialogue take place depending on the learning environment. It is evident, for example, that learners' motivation for participating in online community building is dependent on careful scaffolding of the learning interactions and the provision of a strong focus for the discussions (Preece, 2000; Salmon, 2011). Much of this preparatory work is the responsibility of the tutor; this locus of responsibility is contradictory to the learner-centered model inherent in PLEs such as the ePortfolio. This suggests that while Salmon's (2011) five-stage model provides a useful framework for supporting learning interactions within a VLE-based community, using a personal learning environment such as the ePortfolio necessitates a different perspective. One key difference is that within a personal learning space, learners need to take ownership of the process from the very start of their interaction within and through the ePortfolio; this is contradictory to Salmon's (2011) model, which outlines ownership as the final stage of her model of engagement in online communities. This element of ownership and learner control of the online interactions is central in the design of PLEs and should be seen as an essential requirement for their effective use. The ePortfolio as an example of a PLE offers the learner a choice of which parts of his or her academic practice to share with others and thus provides the learner with increased control. Any dialogic interaction is centered on a topic generated by the learner and depends on the learner's confidence, ability, and motivation to initiate useful discussion. These dependencies raise the question of what the motivating factors are for sharing and initiating discussion when doing so is entirely the learner's choice.

Further questions emerge where an ePortfolio is introduced as a mechanism for formative feedback and community building: When an ePortfolio is used to facilitate idea exchange and feedback, to support information sharing, and to build a community of learners, how should it be organized and supported? Do the principles of successful online community-building outlined by Preece (2000) and Salmon (2011) apply where a PLE such as the ePortfolio is concerned, or is a different approach required where control, initiative, and ownership are central? Does the requirement to have a high level of personalization and ownership from the start pose issues for learners who are less experienced in online communities and interactions?

Study Design and Methodology

The methodological approach used for the present study involved a small scale, qualitative action research approach, focused on the context of a blended learning Master's level course in Education Innovation and Enterprise. The Master's program includes an e-learning module that is delivered over fifteen weeks in the second semester of the students' first year of study. The module, entitled "Enhancing Practice through Technological Innovation," seeks to encourage learners to explore opportunities for technological innovation and to locate these opportunities within the social, cultural, and technological parameters of their professional context. Through the hands-on use of various technologies, which enabled a technical understanding of the tools themselves, the learners were charged with designing, developing, and implementing digital learning objects. They would then gain a greater pedagogical understanding of the technologies by evaluating their potential value and application for learning, teaching, and assessment.

A convenience sample of seven students studying in the Master's program participated in the present study, which represents the entire year cohort for the program and provides a sufficient number of subjects for the current research methodology (Cohen, Manion, & Morrison, 2007). The cohort was comprised of mature students, who were also professionals working in diverse educational contexts ranging from information management roles to IT support to secondary, post-compulsory, further, and higher education teaching roles. While not all learners were student-facing in their role, they all had an educational development context to their profession within which they could ground their work on the assessment for the module.

The module assessment within which the ePortfolio was used required learners to produce the following digital learning objects:

- A podcast, to be used in an educational context. Depending on the student's professional role, the podcast could be targeted at either a group of learners as a teaching tool, or as a staff development tool for colleagues or other stakeholders (staff, students).
- An educational blog, giving opportunities for supporting teaching and learning. Once again, depending on the student's professional role, the blog could be targeted at a group of learners to support their studies. Alternatively, the blog could be designed to support a community of practice within the student's professional area. Part of the challenge of producing the blog was therefore for students

to engage their colleagues in meaningful discussion using the blog as a platform. The majority of students developed their blogs using Blogger as a platform (<http://www.blogger.com/home>), with the exception of two cases. One student chose the Teachers' Education Supplement (TES) Further Education Lecturing forum (<http://community.tes.co.uk/forums/111.aspx>) which allowed her to reach a broader external audience of professionals. Another student used the blog tool in the ePortfolio to set up his blog. He subsequently published this online, inviting IT education professionals from his professional contact list to participate and comment.

Both assessments further required students to provide a critical reflective commentary on the production and development process of their podcast and blog. Students developed this ongoing reflective commentary using the blog asset in PebblePAD (see Figure 2). Since the role of this critical commentary was to act as a developmental tool, students were advised to share their blog with their tutor and peers, thus obtaining regular feedback throughout the process of developing their thinking around the assessment. It is worth noting that whether and how often learners shared their blog posts with others was a matter of personal decision-making. This blog and the reflective commentary it contained provided the interactional data for analysis discussed in this paper.

Action Research

The study followed an action research methodology seeking to enhance practice in supporting learners on blended learning part-time programs. Kemmis (2006) emphasized that the primary function of action research is to problematize current practice and bring to the surface what may be perceived as "unwelcome truths" (p. 461) within the area of practice. Within this study the area that is problematized is the opportunity that the learner has to participate in a community of learners and to link this participation directly to his or her own progress in the course.

While currently the learners in this study have access to face-to-face day schools, these take place once a month and do not provide sufficient interaction and dialogue for community building. In addition, learners have access to the institutional VLE, which does offer a discussion forum tool, but it does not provide an opportunity for the learner to personalize this space. The particular module of study discussed here requires learners to generate practice in developing digital learning objects and to critically reflect on this

practice. These requirements meant that there was a need to provide links between the learners' personal space and reflection and the broader dialogue and communication with peers. The VLE alone could not meet this requirement and this opened up opportunities to consider an ePortfolio system, a different form of provision that allows for community building and personalization and that allows learners to develop critical reflection on the complex digital learning object which they were producing.

Mason and Rennie (2008) identify developing skills of critical and analytical thinking as one of the primary strengths of blogs, as well as the opportunity to gain feedback from a broader community (p. 62). However, when the priority is obtaining well considered and informative feedback, the authors point to the value of online communities and discussion forums, particularly allowing opportunities for peer support: "The asynchronous nature [of online forums] allows time for a considered response. This leads to a more profound discussion of ideas than is usual in a face-to-face tutorial" (p. 92).

The challenge for the ePortfolio to be used in the learning context of the Education Innovation and Enterprise course was to provide an environment which allowed the learner an opportunity to create his or her own learning space within which he or she could reflect on and critically analyze the creation of digital objects as required by the module outcomes. In addition, this learning space needed to offer a dialogic mechanism of support, as outlined in the conversational framework (Laurillard, 2002). Such a dialogic mechanism would further be essential for providing opportunities to establish the necessary community of learners. It is evident that, rather than using one tool for supporting learners, a combination of tools would be necessary to provide personalization, opportunities for critical analysis, and forums for feedback and support. As an aggregation of a set of versatile e-learning tools, the ePortfolio has the potential to address these complex needs.

ePortfolio Platform

The PebblePAD ePortfolio platform used within the "Enhancing Practice through Technological Innovation" module offers a personal learning space where the learner may create a variety of assets (i.e., learning objects) for the purposes of reflection (see Figure 3). The learner is then able to share these assets with specific members of his or her learning community, including peers and tutors. The ePortfolio platform chosen is widely used within UK Higher and Further education contexts, primarily for the purposes of personal development planning, continuing professional development, and formative and

Figure 2
Example of a Student's Blog Created within the ePortfolio

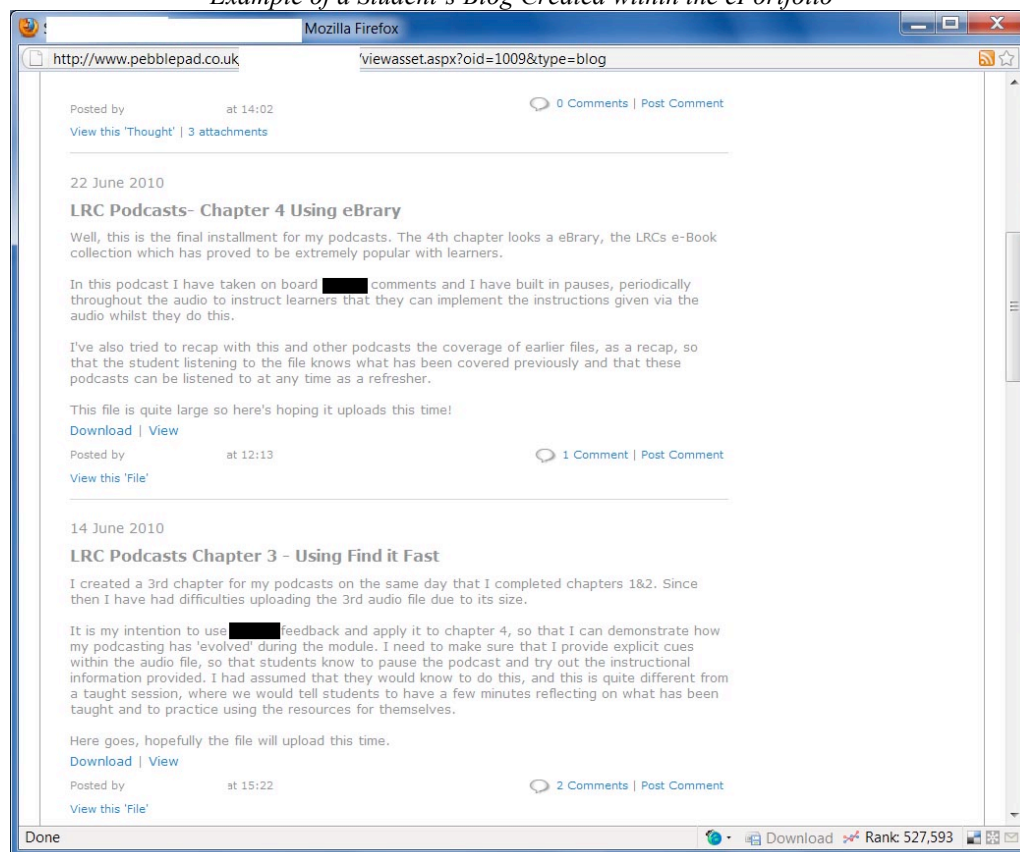
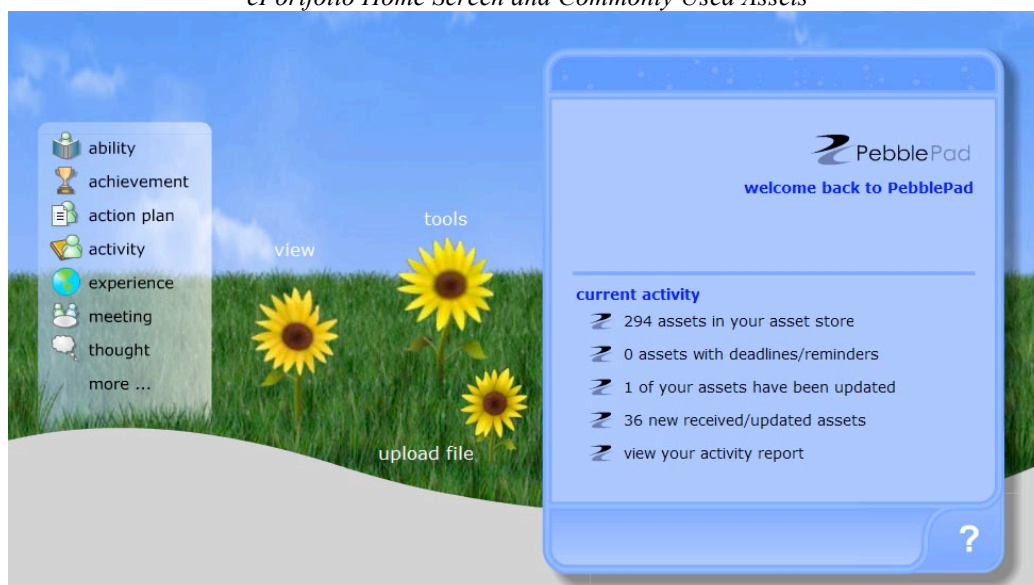


Figure 3
ePortfolio Home Screen and Commonly Used Assets



summative assessment purposes (Pebble Learning, 2011). It was considered appropriate for the module addressed in this study, as it offered the opportunity to share selected assets with a learning community while keeping a record of other assets for personal reference and use, thereby introducing the benefits of a personal learning environment as opposed to a more general discussion forum.

Data Collection

This action research study adopted two different methods of data gathering: a documentary analysis of the interactional content which students created through the ePortfolio (e.g., blog posts, responses to others' posts); and a focus group interview with the participating students. The blog posts analyzed were those set up in PebblePAD and contained the critical reflective commentary on the production process of the student's educational podcast and blog.

The analysis of blog posts was influenced by the methodology on a study of discussion forums by Jones and Lea (2008), which applied a textual analysis approach, focusing on understanding how and why learners use a specific tool for communication with what audiences and for what purposes. The focus is specifically on texts produced with digital technologies. Using this approach allows the analysis to focus on the motivations behind learners' posts giving an insight into what engages them in community building and under what circumstances critical reflection develops most fully.

A focus group interview was conducted in order to create an opportunity to understand the perspectives of students themselves in working with the ePortfolio. Kemmis (2006) maintains that this aspect of listening to the voice and perspectives of others besides professional practitioners is essential within an action research methodology. The focus group interview supplemented the documentary analysis data by ensuring that students' perspectives were listened to actively and their voices were not excluded from the analysis of the data. The focus group interview was carried out at the end of the process of using the ePortfolio as part of the module of study. It explored learners' perceptions of the ePortfolio as a learning space. Learners were invited to reflect on what motivated them to engage in providing peer feedback or posting thoughts on the ePortfolio. Aspects of pedagogic responsiveness of the tool were also explored such as whether learners felt in control of the ePortfolio as a space and its functions.

Data Analysis

A grounded theory approach was applied to the analysis of the data, as described by Glaser and Strauss

(1967). The data were coded in three stages as suggested by Strauss and Corbin (1998), applying open, axial, and selective coding. At the open coding stage, 30 codes were identified (see Table 1), which were then developed into categories at the axial coding stage. The axial coding stage further involved the process of constant comparison, comparing any new instances in the data with already existing codes and categories. This allowed for further analysis of the coded text and refinement of the coded categories. Several key categories emerged through the axial and selective coding stages (see Figure 4), which focused the analysis on the aspects of reflection, planning progress, peer feedback, functions of the ePortfolio, the formal or informal nature of the ePortfolio, and the development of a community of learners.

The computer aided qualitative data analysis software NVivo was used to carry out the coding. Free nodes and *in vivo* coding were used at the open coding stage. Tree nodes were used at the axial coding stage to develop categories within the data. Models and relationships within NVivo were used to provide visual representations of links within the data and to support the development of conceptual categories (see Figure 5).

Findings

Analysis of Blog Posts

Guided by Matusov et al.'s (2005) study, a focus was placed on the nature of the conversation topics in which learners engaged in order to understand whether and how these conversations worked as a useful feedback mechanism for learners. Analysis also focused on identifying whether learners adopted specific roles within the discussion and if this influenced the effectiveness of the feedback (Jones & Lea, 2008; Salmon, 2011). Several different types of posts were identified, each of which can be seen as a form of engagement in a community of learning (see Table 2). Some of these interactions served a particular purpose in the learning process, as discussed below.

"How to" posts. Early posts focused on sharing knowledge of how to address technical issues, imparting procedural and declarative knowledge; these contributions were classified as "how to" posts:

To the rest of the group, putting expression and emotion into the recording may sound silly at the time but it does improve the recording dramatically. . . . Audacity is an easy tool to use for this process, one of the functions within audacity is the ability to change the tone, pitch, and style of your voice, this adds amusement for about 5 minutes. (Student 3)

Figure 4
Examples of Axial Coding Models Developed in NVivo

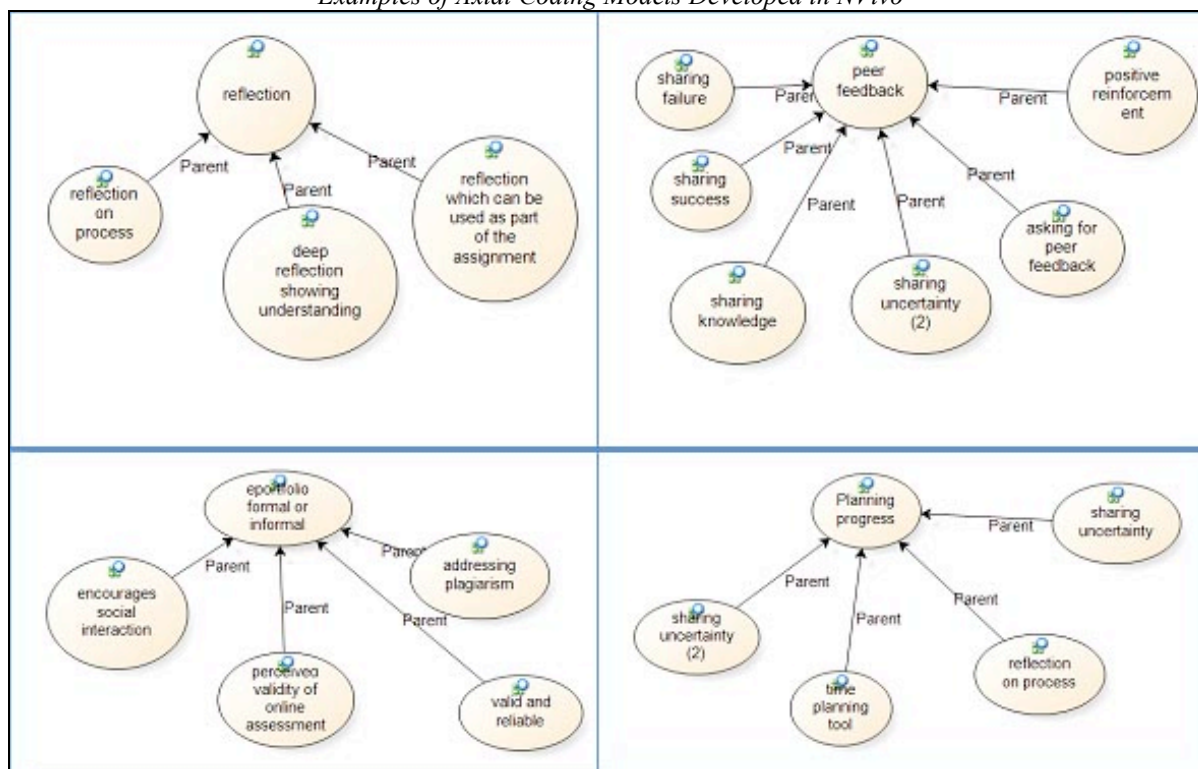
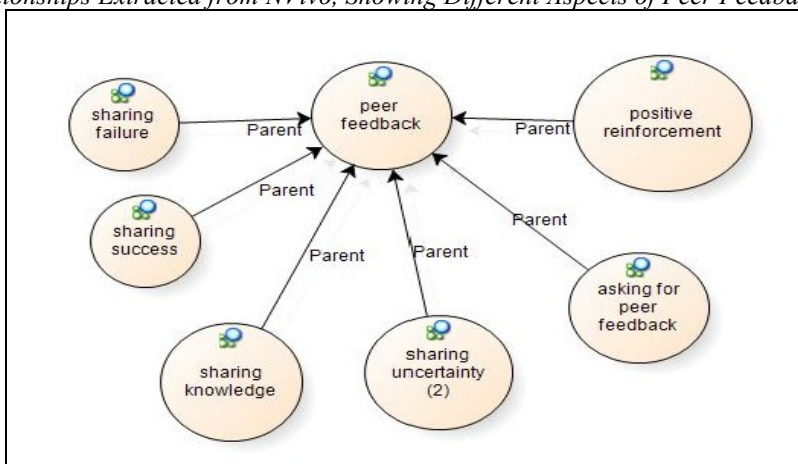


Figure 5
Node Relationships Extracted from NVivo, Showing Different Aspects of Peer Feedback Identified



The focus of giving support on technical issues was not surprising as the module studied requires students to learn how to create e-learning objects such as blogs and podcasts, which requires some level of technical expertise. What was interesting was the learners' motivation in posting, which can be interpreted as adopting a supportive role toward others. Preece (2000)

indicates that in a successful community of learners, participants will adopt specific roles, including those of providing support to others (p. 82). The learner's comments in this case gave an indication that successful community building was taking place.

The how to posts could further be related to stage three of Salmon's (2011) five-stage model: information

Table 2
Student Comments

Sharing Success	Sharing Failure	Sharing Uncertainty
<p>Student 2: Yeah!!!! I had a reply to my blog!!! Hi All Just jumping around in glee! I have had a reply from a STRANGER on my blog! After a couple of weeks of worrying that I would have to stand over my colleagues, friends, students, husband and the dog to reply to my blog on Blogger.com!! I decided to add my comments to an educational website called TES Connect. This was a very simple process and YES it has paid off! ‘</p>	<p>Student 3: My first attempt at creating some podcasts sounded like my voice was very expressionless and dull, I should imagine that would not make for good listening. I decided to re-do the first two and try and place some emotion in my voice so the listener may be slightly engaged. I re- worked the first two giving emotion to the words, hopefully giving them life. The finished mp3 sounded like I was being patronizing to a small child!! however, it did sound better.</p>	<p>Student 5: It has been some couple of weeks since I have had the blog created. I have tried to market it and disseminate amongst my current and past learners. However this has proven to be much more difficult than I anticipated. There have been some subscriptions and followers, however responses are not flowing in. In reflection this demonstrates that blogs are not widely yet appreciated for their educational purposes and many learners are still unfamiliar with them in general. One of the learners had never used one at all.</p>

exchange. At this stage, learners engage in exploration and discovery of problems or issues through the sharing of information. Salmon (2011) defines that the role of the tutor here is to focus activity on these preparatory, planning aspects in the process of learning. As a tutor, my comments and guidance at this stage were aimed at encouraging this information exchange. The constructivist principle of the learner as an active explorer and the tutor as a facilitator of the learning interactions is evident here (Fry, Ketteridge, & Marshall, 2008). In Salmon's (2011) description of the information exchange phase shows that this kind of conversation is very similar to this which is expected to take place in VLE discussion forums.

It is important to note that all communication was student-initiated and student-led with each dialogue exchange contained within a student's ePortfolio blog. While a discussion board requires the tutor to take a lead in initiating and encouraging these interactions, my role as a tutor in this environment was supportive rather than leading. This would suggest that learners had to take control over the discursive process, and it confirms the requirement which a PLE places on the learner to be in control and to take ownership of the learning interactions. The tutor feedback undoubtedly played a role in providing direction and reinforcement but in a way that was reactive to the learner's thought process rather than proactive to initiating the exchange.

Sharing success, sharing failure, sharing uncertainty. Another type of post that was revealed through the blog discourse was students' sharing of success and failure on their ongoing work as well as sharing any uncertainty they had about the learning and

production processes in which they were engaged (see Table 2). While some of these comments are a spontaneous sharing of emotions, collectively they are a good example of reflection in action (Schön, 1996). In particular the "sharing uncertainty" comments when viewed in context proved to lead learners into planning and problem solving. Schön (1996) identifies uncertainty and uneasiness as central to the process of reflection in action:

Many practitioners lock into a view of themselves as technical experts, find nothing in the world of practice to occasion reflection. . . . Others, more inclined towards and adept at reflection-in-action, nevertheless feel profoundly uneasy because they cannot say what they know how to do, cannot justify its quality or rigor. (p. 29)

In the same way that Schön places a value on uneasiness as a sign of a reflective practitioner and as a trigger for reflection in action, the initially shared emotive comments of uncertainty in students' blogs acted as a reflective mechanism for learners. The sharing of uncertainty led into planning progress and reflection on progress. This type of exchange further relates to stage four of Salmon's (2011) five-stage model: knowledge construction. Salmon (2011) indicates that at this stage learners interact with each other more actively, and they are further more likely to learn from each other than they are to learn from their tutor. There is evidence in the nature of learners' interactions that they needed each other's input at this stage; their commentary was directed to each other

rather than directly to the tutor. Working towards the same goals and engaging in similar processes created a need for these learners to have a forum within which to share their progress with their peers.

A deep approach to learning. In many of these exchanges, learners attached the digital learning objects they were developing (e.g., podcasts, vodcasts, links to external blogs) to their posts in order to illustrate their point to others. This type of enhanced dialogue is facilitated well through the ePortfolio which enables and encourages the linking of assets (e.g., blogs, files, action plans) as a way of providing evidence of practice and achievement, a feature strongly emphasized because of the ePortfolio's close alignment to personal development planning (Ward & Richardson, 2005). Underlying this dynamic linking of learning objects there is a deep approach to learning, which is encouraged within the PLE. As defined by Fry et al. (2008), a deep approach to learning, where the learner seeks to construct meaning rather than to complete learning tasks superficially, requires a constructivist pedagogical approach. A constructivist approach is learner centered and requires the learner to take fuller responsibility for the process of learning.

Thus the linking of content in which these learners engaged provides evidence of more than a superficial evidencing of progress; the links to digital learning objects and the reflective writing around them demonstrated a need to understand the context more fully rather than to evidence achievement. The fact that many of the posts were focused on temporary failures, setbacks, and uncertainties highlights a focus on process and understanding rather than on creating the impression that "maximum learning has taken place" as is characteristic of the surface approach to learning (Fry et al., 2008, p. 30).

The ePortfolio as a PLE offers functionality that supports this dynamic linking of digital objects to ideas and reflection. The digital content was usually linked to a blog post and shared with other learners and the tutor; this sharing of content garnered feedback from the learning community. The ePortfolio offers a space where all of these elements can be dynamically linked to collectively illustrate the learning and production processes in which the learner was engaging. This illustration would then be available to the learner for reflective review and to the tutor for formative assessment purposes. While this may be possible within a standard VLE discussion forum in terms of functionality, the learning process would not be available to the student for reflective review in the form of a learning journey in the way it would be through a PLE.

Focus Group Interview with Students

Two aspects in particular were identified within the focus group as significant in shaping learners'

perceptions of the tool: sociability and perceived validity. The aspect of personalization was a further area of focus, which revealed learners' perceptions towards the ePortfolio as a PLE.

Sociability and perceived validity. Some of the students commented on the fact that the ePortfolio encouraged informal social interaction. They found themselves involuntarily slipping into a less formal style of conversation. While they did not feel that this detracted from the quality of their thinking, they were surprised that it happened and said they would not do this in any other form of written communication with colleagues:

Going back to an earlier point about formal-informal, when I was starting to put some thoughts to paper on the reflective commentary I found that when I was writing on the eportfolio I was slipping into a non-formal way of writing and it struck a chord with me about what is in the literature on students being very resistant to using social networking tools for educational purposes because I found myself in that position I was slipping into a more informal language which I would use on a social networking site while actually – it is actually to support me in this course of study so I have actually started writing my reflective commentary in Word because that allowed me to stick to a more academic style of writing while when trying to write it on the eportfolio. . . . (Student 4)

The social element of the ePortfolio appears to be very similar to that of online discussion forums. As Preece (2000) identifies alongside usability, sociability is one of the two essential aspects of community creation (p. 26). The "slipping into" an informal language which learners experienced can be seen as one indication of online community creation; however, this does not change the fact that learners felt negatively about the way their discussions took on an informal tone of voice. It is evident that since learners saw their interactions within the ePortfolio as formal learning, they considered that the informality of the exchanges took away some of the legitimacy of their conversations as academic practice. This leads to the question of whether online discussion forums are in fact seen as evidence of legitimate and valid academic practice by learners.

Some learners highlighted that it was important that the ePortfolio allowed for discussions and conversations to be recorded more formally, adding a date and time to all posts. They felt this gave more validity and reliability to online posts as an assessed task. This was also an indication that learners thought about the ePortfolio as a formal learning tool and support mechanism.

This dichotomy of formal and informal learning processes exists within any online learning environment

and is documented in Salmon's (2011) five-stage model; the initial stages need to allow for informality and socialization as part of community building. The later stages focus more strongly on sharing and constructing knowledge and reflecting, which naturally encourages learners to seek a reliable tool and more formal structure for their interactions. This is reflected in the comment by the student who stated that she started using Word to write out her posts before posting them on the ePortfolio. The question arises of how to respond to the learners' needs for a formal and authentic form for their dialogic interactions that at the same time benefits from the community-building aspect of socialization. This may be a matter of making clear early in the process what the rules of interaction are and what forms of communication are acceptable. It could also be the case that we need to accept that, in the later stages of their learning interactions, learners would migrate their writing from the online environment to other more "formal" tools for recording reflection.

Personalization. The students were encouraged to reflect on their perception of the kind of space which the ePortfolio offers for their learning, whether personal or otherwise. One learner specified that he did not see the ePortfolio as personal space, but at the same time he did not think about it as institutional space either. He saw it as a work area to use as part of this learning process: "I personally didn't see it as 'this is mine'. But I didn't see it as this is the college's either. I just saw it as an area to work on" (Student 3).

Another learner associated the ePortfolio as space for the course. She did say that the ePortfolio felt more personal in comparison with the institutional VLE; however, she still did not define this as "personal" space, but rather as "course specific" space: "Yes I suppose I just associate it with this course – I don't associate it with Blackboard or ___ College. . . . So I did see it as more personalized than perhaps Blackboard is for example" (Student 6).

These comments suggest that while learners identified the space as useful with relation to their work, they did not perceive it as personal space. It could be that these learners had only a limited experience of the ePortfolio and their perceptions may change after prolonged use. However, it may also be the case that learners do not consider learning spaces as personal.

Other students valued the space in terms of its unique functionality. They identified that there was a need for them to be able to construct a form of "running reflective commentary" (Student 4) on their learning process, and that the ePortfolio was the only tool available to them which offered this functionality. The element of the running reflective commentary emphasizes the value of continuity in the reflective process. This kind of continuity is less likely to happen

when reflections are posted on a general discussion forum and contributing to a common thread. Discussion forums are based on the principle of contributing to a common thread which works towards collective thinking, but can at the same time fragment the learner's personal journey. While aiming to establish a common theme for discussion the "threads" within a forum impose a certain direction; the ePortfolio, on the other hand, places the control of this direction in the hands of the learner. Its continuity allows the learner to construct a narrative of their learning journey. There was evidence that learners valued this element: "I like sort of retracing my steps" (Student 4); and "Yes that's what I am saying you can see how it develops or perhaps if you need to trace any specific aspect back you can do it" (Student 5).

Reflection naturally involves these processes of retracing one's steps, referring to previous writing. These are the activities that allow the learner to construct a narrative of his or her learning journey and subsequently aid the learner in knowledge construction. Laurillard (2002) identifies that narrative construction aids cognition and meaning making. In this way, while personalization may not be fully achieved, the ability to develop a narrative of the learning journey makes the process personal. JISC (2008) acknowledge this:

The accumulated store of reflections, experiences, and achievements – which might include aspects of informal, unstructured learning as well as that resulting from formal education – may be called upon to present as evidence, but may also be retained as a personal document, an unfolding narrative of a unique learning journey. EPortfolio content developed purely for personal reflection and not shared with others can still support formal and more public forms of learning. (p. 8)

The valuable aspect of personalization that emerged from students' use is that of being able to construct a continuous narrative on their learning process. It appears that whether the ePortfolio is seen as personal or institutional space is not essential to the ability of the learner to construct a narrative around his or her learning journey.

Discussion and Conclusions

The purpose of this research was to explore learners' use of the ePortfolio, a personal learning environment, as a mechanism for peer support and community building. As the sample was limited to the small group taking a specific module that involved the use of the ePortfolio, the findings are not generalizable. However, the study gained some valuable insights into the patterns of use that the

learners adopted and the aspects in which learners found the ePortfolio most useful.

The findings from this study indicate that the use of the ePortfolio cannot be directly equated with learners' use of a discussion forum. Even though the two tools offer similar functionality, it needs to be emphasized that the ePortfolio seems to be more successful in offering learners a space to construct a reflective narrative around their personal learning processes and offering learners an opportunity to revisit and reflect on this process. This was evidenced both through the learners' blog posts and through their discussions within the focus group interview. Students actively linked their work in progress to their blog posts with the intention to reveal uncertainty and temporary failures, and to receive feedback on their thoughts. There was evidence of a reflective process taking place and a desire on the part of the learner to better understand this process. The focus group interview similarly revealed that learners needed to be able to revisit their reflections and the accompanying peer feedback repeatedly as part of their learning journey. Schön's (1996) model of reflection in action provides an insight into the processes that learners were going through with the help of the ePortfolio tool. Fry et al.'s (2008) definition of a deep approach to learning applies in this case as the linking of work in progress to blog posts and the dialogue developing around this aimed to develop understanding rather than to merely evidence achievement.

Salmon's (2011) five-stage model for collaborative online learning is a valuable framework for analyzing and planning activities around the ePortfolio. The stages of socialization, information exchange, and knowledge construction were visible in learners' use of the ePortfolio; the mechanisms for support at each of these stages identified by Salmon (2011) were just as applicable in the case of ePortfolio use. However, there are some clear differences in the nature of the tutor's role and the nature of the learner's participation where a PLE is concerned. While in Salmon's (2011) model the tutor has an active role in initiating, organizing, and encouraging the dialogic interactions of learners, in PLEs most of these activities are learner initiated. Therefore the PLE requires the learner to acquire a greater level of control and ownership of the learning process earlier on in the learning interactions. The findings of the study indicated that learners were able to adopt such control and ownership. Important facilitating factors were the supportive and responsive community that the learners provided for each other and the affordances of the ePortfolio as a personal learning environment. This "flattening" of the hierarchy of learning interactions as Salmon (2011, p. 48) calls it and the shift of the locus of power in initiating and leading learning interactions from tutor to learner need

further and more in-depth exploration in the context of PLEs in particular.

The culture of support and sharing which unfolded in students' interactions, evidenced in the "how to" posts and "sharing success, sharing failure, sharing uncertainty" posts confirmed ideas by Preece (2000) on the value of socialization and role taking within discussion forums and on the supportive nature from which communities develop (Jones & Lea, 2008). This helps make the argument that the ePortfolio can contribute to the building of communities of learners just as well as a VLE discussion forum. Therefore, there are significant benefits to adopting the ePortfolio as an additional mechanism for socialization in distance or blended learning environments.

The perceived informality of the discussions which developed from the students' point of view raises the question of how to address the dichotomy of the informal language used in online discussions which encourages socialization (inherent to learning) and the need for a legitimate tool for supporting students' learning interactions. It is necessary to listen to students' concerns in this respect; learners valued the aspects of the ePortfolio that presented their interactions within the ePortfolio as formal and legitimate learning. Thus, the rules of interaction and the forms of communication that are acceptable need to be clearly stated as the norms of ePortfolio use and communication.

In conclusion, the essential aspects of peer support, community building, and reflection seemed to be well supported by the ePortfolio in this case. It is necessary to explore further whether there are specific mechanisms that need to be put in place in order to support the early personalization required with ePortfolio and articulate these as part of an operational framework for ePortfolio use.

References

- Brown, S. (2010). From VLEs to learning webs: The implications of web 2.0 for learning and teaching. *Interactive Learning Environments*, 18(1), 1-11. doi:10.1080/10494820802158983
- Cohen, L., Manion, L., & Morrison, K. (2007). Sampling. In L. Cohen, L. Manion, & K. Morrison (Eds.), *Research methods in education* (6th ed., pp. 100-117). London, England: Routledge.
- Collis, B., & Moonen, J. (2001). Flexible learning: It's not just about distance. In B. Collis & J. Moonen (Eds.), *Flexible learning in a digital world: Experiences and expectations*. (pp. 8-28). Oxon, UK: RoutledgeFalmer.
- Fry, H., Ketteridge, S., & Marshall, S. (2008). Understanding student learning. In H. Fry, S. Ketteridge & S. Marshall (Eds.), *A handbook for*

- teaching and learning in higher education* (3d ed., pp. 8-26). London, England: Kogan Page.
- Glaser, B., & Strauss, A. (1967). *The discovery of grounded theory*. New York, NY: Aldine Publishing Company.
- Grant, S., Rees-Jones, P., & Ward, R. (2004). *e-Portfolio and its relationship to personal development planning: A view from the UK for Europe and beyond*. Retrieved from <http://www.jisc.ac.uk/whatwedo/programmes/elearning/eportfolios/resources.aspx>
- Higher Education Academy. (2012). *Personal development planning*. Retrieved from <http://www.heacademy.ac.uk/resources/detail/pdp/pdp>
- JISC. (2008). *Effective practice with e-portfolios: Supporting 21st century learning*. Higher Education Funding Council for England (HEFCE). Retrieved from <http://www.jisc.ac.uk/media/documents/publications/effectivepracticeeportfolios.pdf>
- Jones, S., & Lea, M. (2008). Digital literacies in the lives of undergraduate students: Exploring personal and curricular spheres of practice. *Electronic Journal of e-Learning*, 6(3), 207-216.
- Kemmis, S. (2006). Participatory action research and the public sphere. *Educational Action Research*, 14(4), 459-476. doi:10.1080/09650790600975593
- Laurillard, D. (2002). *Rethinking university teaching: A framework for the effective use of educational technology* (2nd ed.). London, England: Routledge Falmer.
- Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge, UK: Cambridge University Press.
- Littlejohn, A., & Pegler, C. (2007). *Preparing for blended e-learning*. London, England: Routledge.
- Mason, R., & Rennie, F. (2008). The tools in practice. In R. Mason & F. Rennie (Eds.), *E-learning and social networking handbook* (pp. 61-133). London, England: Routledge.
- Matusov, E., Hayes, R., & Pluta, M. (2005). Using discussion webs to develop an academic community of learners. *Educational Technology & Society*, 8(2), 16-39.
- Njenga, J. K., & Fourie, L. C. H. (2010). The myths about e-learning in higher education. *British Journal of Educational Technology*, 41(2), 199-212. doi:10.1111/j.1467-8535.2008.00910.x
- PebbleLearning (2011). *About PebblePAD*. Retrieved from <http://www.pebblepad.co.uk/about.asp>
- Preece, J. (2000). *Online communities: Designing usability, supporting sociability*. New York, NY: John Wiley and Sons Ltd.
- Salmon, G. (2004). *The 5 stage model*. Retrieved from <http://www.atimod.com/e-moderating/5stage.shtml>
- Salmon, G. (2011). *E-moderating: The key to teaching and learning online* (3rd ed.). London, England: Kogan Page.
- Schön, D. (1996). From technical rationality to reflection-in-action. In R. Edwards, A. Hanson, & P. Raggatt (Eds.), *Boundaries of adult learning* (pp. 8-32). London, England: Routledge.
- Stefani, L., Mason, R., & Pegler, C. (2007). *The educational potential of e-portfolios: Supporting personal development and reflective learning (connecting with e-learning)*. London, England: Routledge.
- Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: Techniques and procedures of developing grounded theory* (2nd ed.). London, England: Sage Publications.
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. New York, NY: Harvard University Press.
- Ward, R., & Richardson, H. (2005). *Getting what you want: Implementing Personal Development Planning through e-portfolio*. Retrieved from <http://www.jisc.ac.uk/whatwedo/programmes/elearning/eportfolios/resources.aspx>

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