How am I learning to scaffold a synchronous online professional development course?

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Abstract

This article details how I learned to scaffold a synchronous online professional development course through the creation of a web-based tutorial. Synchronous e-learning, via web-conferencing, has emerged as a viable alternative to traditional face-to-face education, as it allows for just-in-time feedback and communication in real time. My employer, a professional services membership association currently offers its members the option to participate in synchronous online professional development courses streamed using web conferencing software. My action research enquiry was initially guided by my value of empathy and my desire to support individuals who wanted to participate in our synchronous online courses. Through my research of the key conceptual theme of scaffolding, and through my participation as a learner in synchronous online courses as part of DCU's MSc. in Education and Training Management (eLearning), I apply the knowledge to the creation of a web-based tutorial, designed to scaffold inexperienced learners, and those with poor information technology (IT) skills, to participate in synchronous online professional development courses. Through the dialogue of the peer review process it became apparent that I was being guided by my values of inclusiveness, accessibility and collaboration in my efforts to learn how to scaffold online learners.

Keywords: scaffolding; e-learning; action research; living educational theory; web-based tutorial; synchronous e-learning; pedagogy of the unique

Introduction

This is an action research study into how I can improve my professional practice. It is an account of how I answered my research question 'How am I learning to scaffold a synchronous online professional development course'. Through my research of the key conceptual theme of scaffolding, I apply the knowledge I have learned to the creation of a web-based tutorial, designed to support inexperienced learners, and those with poor information technology (IT) skills, participating in synchronous online professional development courses. To provide a background to this study I first detail my professional context. I explain how my educational values influenced my choice of research question and how, through the research process, I intend to use these values as guiding principles. My awareness of my own values, and how they are articulated in this text became clearer to me through further reflection and further dialogue in the form of the peer review process. On reading my reflective journals, Jacqueline Scholes Rhodes believed that I expressed values of accessibility, inclusivity and collaboration. I examine how the notion of scaffolding has evolved from its conception to its present day use and review suggested best practice guidelines to follow when designing a software scaffold. I then provide a brief overview of action research. My study is implemented over two action cycles and on completion of these sections I discuss my findings, and their educational significance.

My Context

At the time of writing I was working as a professional development coordinator for a professional services membership association with 4,500 members. One of the primary roles of the organisation is that of education. Post qualification, members are required to maintain their professional competence through the completion of continuing professional development (CPD). CPD is the means by which professionals develop and maintain the level of competence necessary to provide high quality services to clients, employers and other stakeholders (Chartered Accountants Ireland, 2011). Completing a minimum amount of CPD became formalised for my employers' membership in 2010. My responsibilities include the administration and co-ordination of CPD courses for members. Over the past two years my role has expanded, in that I now have primary responsibility for the facilitation, production and release of e-learning professional development courses.

Professional Development and e-Learning

Online courses are becoming an increasingly popular alternative for those completing CPD. Along with my employer, professional bodies such as Chartered Accountants Ireland (2011) and Certified Public Accountants (CPA) (2011) are making more online courses available to accommodate their membership and customer base. It can be argued that attributes such as anytime, anyplace and cost-effectiveness are especially relevant to today's professionals who have time consuming work commitments in a struggling economy. A member needs analysis survey carried out by my employer in January 2010 found that convenience and cost-effectiveness were the two primary factors influencing members' participation in online professional development courses. Case studies have also shown that online courses can be an effective means for professionals to learn and maintain competency (Donavant, 2009; Gill, 2007; Wall & Amhed, 2007; Sutton et al., 2005).

In February 2010 my employer began to offer synchronous online CPD courses (termed 'live online seminars') as an alternative to attending classroom courses. This was at the same time as I was doing the MSc. in Education and Training Management (eLearning) programme and experiencing the use of a range of eLearning technologies including synchronous online tools for learning and teaching. Live online seminars take place in real time and are broadcast from classroom events using web conferencing software. While, for the most part, feedback from live online course participants had been positive, a minority of

participants experienced difficulties joining, connecting audio and navigating the web conferencing interface and interactive features. My study stemmed from a concern that these types of difficulties could negatively affect the learners' learning experiences, and that they could in effect be left behind as more courses move online. To avoid this, additional support and procedural guidance could be provided for online learners who may have little prior knowledge or experience, and/or poor IT skills. I decided that a freely accessible web-based tutorial, containing instructions on how to access and navigate live online courses, could be a means by which I could provide support.

My Educational Values

I believed that my research was underpinned by my values of empathy and supporting learners through scaffolding their learning. Initially, I found it very difficult to recognise my educational values. Whitehead (1989) advised that sometimes examining what you are not doing in your role as a practitioner can help you to identify your educational values. I have always aspired to be an educator and on reflection I realised that I did not recognise and respect my practice and my role as a practitioner as I mainly carried out administrative tasks. I wanted to help and support learners but doubted my ability and my right to do so as I was not an educator.

By reflecting on my practice and on my background, and to a great extent, discussing and exploring these reflections with my validation group in DCU, that was made up of my lecturers, Margaret Farren and Yvonne Crotty, and my classmate Anne, my values emerged.

My interest in education and desire to teach, which I had not practiced to any great extent, was the starting point. Through my limited experience training co-workers, providing technical support, giving mathematics grinds and as a student myself, I believed that to educate others you must first identify and empathise with their experiences. You can then put yourself in their shoes and explore ways in which to assist them. While participating in the Masters programme I had experienced times when I was unable to understand what I was being taught. In particular, at first I found it very difficult to understand the idea of one's ontology (from an action research perspective) and its interplay with one's educational values. In the masters programme we were encouraged to articulate our own educational values. I previously studied mathematics, geography and information technology and I believe that it is fair to say that educational values and their importance were never mentioned in class. Before beginning the Masters programme I was completely unfamiliar with notion that a researcher's own ontology and belief system could be so pivotal in their research. Being unable to grasp the meaning of ontology led me to feel incredibly disheartened and frustrated. However, through the encouragement and assistance of Margaret and Yvonne, and from listening to the experiences and the opinions of my classmates I began to comprehend the meaning of ontology. In essence, my lecturers and classmates scaffolded my learning, helping me to understand and achieve what I could not do on my own (Appendix A – Reflective Journals). When later reflecting on this, I recognised that my values inspired me to do the best I could to assist and support online learners having difficulties participating in online professional development courses. As I mentioned in my introductory paragraph, one of the reviewers of this article was of the opinion that my appendices suggested that my educational influences were guided by values of inclusivity, accessibility and collaboration. While I had recognised that these were values that I felt strongly about I did fully comprehend that they were guiding my investigations into how I could support learners through learning how to scaffold their learning. On reflection, I could recognise that through creating an online tutorial that would scaffold online learners, I was trying to include learners that I was afraid might get left behind and make synchronous online courses more accessible to all, no matter their experience of skill set.

Scaffolding

As I chose to investigate whether I could learn to support learners through scaffolding their learning in an online environment, I thought that it was important that I first understand the origins of the notion of scaffolding and how this notion has developed. Particularly I wanted to look at whether more modern interpretations remained true to the core principles on which it was originally based.

Wood, Bruner and Ross referred to 'scaffolding' in their paper *The role of tutoring in problem solving* (1976). The authors defined scaffolding as assistance provided by an adult or expert 'that enables a child or novice to solve a problem, carry out a task or achieve a goal which would be beyond his unassisted efforts'. They suggested that scaffolding was based on two theoretical models, namely the theory of the task and the theory of the tutee and outlined six functions to be carried out by the tutor in the scaffolding process:

1. Recruitment – garner the child's interest.
2. Reduction in the degrees of freedom – simplify the task.
3. Direction maintenance – motivate the child.
4. Marking critical features – marking the relevant features of the task.
5. Frustration control – use 'face saving' for errors or exploit the child's wish to please.
6. Demonstration – imitate the ideal solution to the problem for the child.

Although not explicitly linked in their original work, the aforementioned authors were inarguably influenced by Vygotsky's work on the Zone of Proximal Development (ZPD) (Stone 1998a). Vygotsky (1978) determined that a child has two developmental levels, the zone of actual development and the zone of proximal development. He defined the zone of proximal development to be 'the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers' (Vygotsky, 1978, p.86). Bruner (1985) later explicated the link between scaffolding and the ZPD. He stated that the tutor scaffolds learning in the ZPD 'to make it possible for the child in Vygotsky's word to internalise external knowledge and convert it into a tool for conscious control' (Bruner, 1985, p.25).

Early studies by Wood, Bruner and Ross on scaffolding centered on one-to-one tutorials (Sherwin, Raiser & Eielson, 2004, p.387). However, the scaffolding metaphor that was used was later extended by Cazden to student-teacher relations and to classroom instruction by Palinscar and Brown (Stone, 1998a). As the scaffolding metaphor broadened, concerns were raised as to whether it still remained true to its original inception as key scaffolding characteristics were missing from its application (Stone, 1998a; Stone, 1998b). Stone (1998a) proposed an enriched scaffolding metaphor, scaffolding as a process, which emphasises the joint tutor and student participation that is evident in the ideas of Vygotsky (1978) and Wood, Bruner and Ross (1976).

Strengthening the definition of the scaffolding metaphor Pol, Volman and Beishuizen (2010, p.274-275) discerned three key characteristics of scaffolding:

1. Contingency – Support must be tailored to suit the student and adapted as the student progresses.
2. Fading – support is gradually withdrawn as the student becomes more competent.

3. Transfer of responsibility – as support fades responsibility moves from the instructor to the student.

The advent of technology enhanced learning environments has resulted in the increased production and implementation of software scaffolds and a further broadening of the notion of scaffolding (Sharma & Hannafin, 2007; Puntambekar & Hübscher, 2005; Pea, 2004). However, there remain opposing views as to whether or not software applications, environments, learning artifacts and similar online resources can be defined as scaffolds as they do not always exhibit the key characteristics of scaffolding (Pol, Volman & Beishuizen, 2010, p.274-275; Pea, 2004). Puntambekar and Hübscher (2005, p.7) provided a useful table demonstrating the evolution of the notion of scaffolding from its original inception to its use in more complex learning environments, which utilise learning support tools, including software tools. I have replicated the table below.

Table 1.   Evolution of the Notion of Scaffolding

Feature of Scaffolding	Original Notion of Scaffolding	Evolved (current) Notion of Scaffolding
Shared understanding	Adult or expert establishes shared understanding of common goal and provides motivation	Authentic task often embedded in the environment provides shared understanding
Scaffolder	• Single, more knowledgeable person provides support to complete the task • Multimodal assistance provided by a single individual	• Assistance is provided; tools and resources • Distributed expertise – Support is not necessarily provided by more knowledgeable person, but by peers as well
Ongoing diagnosis and calibrated support	• Dynamic scaffolding based on an ongoing assessment of the learner (individual) • Adaptive scaffolding – Support is calibrated and sensitive to the changing needs of the learner	• Passive support – Ongoing diagnosis by peers and or software is not necessarily undertaken • Blanket 'scaffolding' – Support (especially in tools) is the same for all students
Fading	Eventual fading of scaffolding as students become more capable of independent activity	In most cases, support is permanent and unchanging

The table illustrates how the features of scaffolding have changed as the notion of scaffolding has evolved. In the evolved notion, shared understanding is now achieved through an authentic task often embedded in the complex learning environment. The role of scaffolder is extended from a single, more knowledge person to include peers and assistance provided by tools and resources. A lack of fading and on-going diagnosis is also apparent in the evolved notion. Puntambekar and Hübscher (2005) view fading as a critical theoretical feature of scaffolding that is not being taken into account when applying the scaffolding notion to software tools. They argue that the scaffolding construct is 'increasingly being used synonymously with support' (Puntambekar & Hübscher, 2005, p.1). Sharma and Hannafin (2007, p.29) identify fading as the key difference between scaffolding and other forms of support and suggest that technological environments do not allow for dynamic scaffolding. Despite this, a number of studies have attempted to introduce fading into

technological environments. Puntambekar and Hübscher (2005) carried out one such study. They proposed that fading could be introduced in a multi-scaffolded environment designed to take account of multiple ZPDs found in a classroom, from which tools are withdrawn to introduce fading.

Other researchers do not strictly adhere to the fading characteristic. Doering and Veletsianos (2007) created a multi-scaffolded environment in which the scaffolds did not fade. They argued that the choice as to whether or not to fade was up to the learner (Ibid.). Saye and Brush's (2002, p.81) study incorporated hard scaffolds, which they defined as 'static supports that can be anticipated and planned in advance, based on typical student difficulties with a task' as opposed to soft scaffolds which are dynamic and situational. Puntambekar and Hübscher (2005, p.8) discuss passive scaffolds, which lack on going diagnosis, adaptation and fading. Passive or hard scaffolds are based primarily on the theory of the task, as the characteristics of the individual tutee are not considered (Ibid.).

Both dynamic and static scaffolding support tools continue to be used in e-learning and blended learning environments. As outlined by Shih et al (2010), dynamic tools have been introduced to encourage self-regulated student learning, and to motivate procrastinators (Tuckman, 2007). Static supports are often seen as a tool to reduce cognitive load and to ensure that learners and teachers can concentrate on relevant tasks (Doering & Veletsianos, 2007). Saye and Brush (2002) admit however, that students may fail to use hard supports and argue for a mix of both static and dynamic supports to be used in blended learning environments to cater for varied needs.

When designing scaffolding in hypermedia environments Shapiro (2008, p.34) advises that you consider the needs of both high prior knowledge and low prior knowledge learners. High prior knowledge learners benefit from having more control over their learning environment whereas low prior knowledge users benefit more when given less control and prescribed pathways (Ibid.).

Action Research

The term action research has been attributed to Kurt Lewin (1946) who devised it as a method of collaborative problem solving between client and researcher to solve a problem and generate knowledge. Lewin described action research as a spiral of steps and each step had four stages; planning, acting, observing and reflecting (1946). The individual or living 'I' is brought to the centre of the research by Whitehead (1989) as the practitioner-researcher engages with the question 'how do I improve what I am doing?' (Ibid.). Through an open-ended spiral of action and reflective cycles, the researcher's values become living standards by which their actions and practice are measured (Whitehead & McNiff, 2006, p.23). Action research is about the researcher constructing knowledge by critically reflecting on and engaging with her own opinions and assumptions in collaboration with the participants in the study throughout the action cycles. Farren (2006) developed the idea of a pedagogy of the unique as a form of practice-led research which expresses the belief that each individual has a distinctive set of values that motivate their research enquiry and which involves systematic processes of action and reflection. She links this to a web of betweenness which draws on Celtic spirituality and the relational dynamic contributions from participants in a research enquiry as each individual recognises the humanity of the other.

As I reflected on my action research in class and through online dialogue during the Masters programme I also found McNiff's (2010) action plan to be of considerable assistance in guiding me in my initial choice of research topic and in structuring the implementation of

my action research. (Appendix F) However the implementation of my research is structured under the headings Plan, Act, Observe and Reflect.

The idea of developing my own living educational theory appealed to me, as I believed that it offers hope that by living my educational values I can generate positive change both in myself as a practitioner, and effect positive change in my workplace. The possibility that I can improve and transform from within my own context is very empowering and liberating. I believe that this approach has given me the opportunity to grow and learn as a practitioner. Sharing your living theory with others and collaborating with your peers can also enhance your learning and growth. The perceptions and insights of others can give you the opportunity to recognise influences, values and guiding principles that you may not have been aware of but that are apparent in your living theory.

Overall ten participants took part in the study. I had hoped to be able to involve members of the professional association to test the web-based tutorial but unfortunately this was not possible due to workplace restrictions. However, nine of the participants who agreed to come onboard were invested colleagues with mixed levels of prior knowledge and IT skills. To ensure that the participants were fully aware of what they were agreeing to, each received a plain language statement detailing fully the purpose of the research and what participating in the research would entail. They also signed an informed consent form. For the purposes of this article, the names of my colleagues who agreed to participate have been changed. My employer gave me permission to utilise member needs analysis survey results and feedback from customers who have previously accessed live online seminars but they requested that I not name the organisation in this article.

I used both qualitative and quantitative methods to collect data, depending on which was most suitable at any given stage. Analysis of the data occurred on an ongoing basis using Miles and Huberman's (1984) tactics for generating meaning. I gathered and analysed existing relevant documentary evidence from my organisation using survey findings and evaluation documents to convey the context and purpose of my research. I also used emails to convey evidence of relevant correspondence throughout the research process.

As a practitioner researching my practice, I was central to the research project and my own observations and interventions generated data throughout each stage of the process. I also used a form of indirect observation, a usability screen recording software entitled Silverback – guerrilla usability testing. Silverback (2011) captures screen activity and highlights mouse clicks. It also records a video of the tester's face and their voice as they test software.

After developing the web-based tutorial, I used a questionnaire so that participants could evaluate the usability of the updated web-based tutorial and their perceived learning, and leave any suggestions for improvement or general comments. The questionnaire consisted of 22 statements relating to usability and perceived learning to which participants were asked to rate their agreement using a five point likert scale. Two open qualitative questions were also included. The questionnaire was modeled on a survey developed by Mackey and Ho (2008) designed to empirically measure the link between the usability of web-based multi-media tutorials and students' perceived learning. I recorded my reflections throughout the study. My reflective journals provide explicit evidence of my own critical thinking as I questioned my own assumptions throughout the research process (Appendix A).

Implementation

Cycle One

In the first cycle I created an online tutorial based on initial data analysis and web-based tutorial and software scaffold design guidelines. A pilot group of five colleagues and my critical friend tested the tutorial and the feedback they provided allowed me to gage whether or not was being true to my core value of empathy and my emerging value of scaffolding learners.

Plan

Initial data analysis

Identifying learning problems and learner needs was highlighted by Huang (2005, p.233) in multimedia tutorial design literature, and was referred to by Wood Bruner and Ross (1976) in their seminal text on scaffolding. As the customer base for live online seminars is very wide I was not in the position to conduct a membership wide survey to establish the learner characteristics and technical skill base as recommended by Yelinek et al. (2008). Instead I concentrated on identifying the issues that cause the most difficulty for learners accessing and participating in live online seminars.

To identify the major issues, I examined completed online feedback forms from previous live online seminars (Appendix B) and looked back at emails received from participants (Appendix K). I also relied heavily upon my own observations, as I was the main point of contact for learners experiencing technical difficulties, and I spoke to two colleagues who had provided similar support. The main issues identified as causing difficulties were as follows:

1. Joining the live online seminar:
    a. Clicking on the URL link given in the invitation email.
    b. Entering name and email address.
2. Connecting audio:
    a. Testing speakers.
    b. Clicking on the 'Call using computer' button to hear the live online seminar.
3. Navigating the live online seminar page.
4. Using the chat facility:
    a. Choosing who to direct a question to.
    b. Where to type a question.
5. Leaving the live online seminar.
6. Additional information:
    a. Many people were unaware that they had been sent copies of the seminar slides and notes in advance.

Act

During the course of the Masters programme we had to critically reflect on the design and application of e-Learning artifacts and storyboard our ideas. From the start of the programme there was an emphasis on the importance of having a vision for technology rather than focusing on technical skills alone (Crotty, 2011a). Technologies offer new and interesting ways to learn and collaborate with others. I believe that technology itself can be used as a tool to teach digital literacy to open up new avenues of learning and experiences for learners. My vision was to create an artifact that could be used to educate learners about

how best to use a new technology that could help them in their professional development. When designing and creating the web-based tutorial I implemented recommendations found in literature I researched surrounding the design of web-based tutorials and scaffolding, in particular, guidelines to consider when designing software scaffolds. While the web-based tutorial would not be individually tailored for each learner, I believed that by concentrating on these common problems I could cater for multiple users and their individual zones of proximal development. This section is structured under the main guidelines that I considered relevant in my design.

Teaching strategy

> *I was thinking of creating two detailed instructive online demonstrations using screen recording software. The first would explain exactly how one could access a live online seminar and how the could then interact with the speaker.*
> *Reflective journal – 5 December 2010*

I also introduced and active learning strategy, as explained by Su and Kuo (2010, p.323), by including interactions to promoting learner-content interaction. Constructivist theory underpins learning in situations where there is learner-content interaction (Zhang et al., 2006). I placed three interactive buttons at key points in the tutorial where, if actually joining and participating in a live online seminar, learners would be required to click a box or a link to proceed to the next step. I included one final interaction where the learner simulates entering a question into the chat facility.

E-Authoring software

After researching various e-authoring tools, I decided that Adobe Captivate would best serve my purposes (Adobe Captivate, 2011). I had not previously used Captivate so it took me some time to familiarise myself with the software. While I had used other screen capture software, the Captivate interface was very new to me. As I recorded in my reflective journal (Appendix A) my difficulties learning how to use the software helped me to identify and empathise with the learners I hoped to assist.

> *I would consider myself to be quite proficient using software and would generally find it easy to quickly pick up the new skills …..I would generally explore the software myself testing out the different functions until I figure out how to use it. However, I had never used Captivate before…., I found it quite difficult to use and impossible to intuitively know what functions to use or buttons to press to get it to do what I wanted. I had in fact hit a brick wall that I could not get over without some outside assistance.*
>
> *Reflective Journal 14 May 2011*

I accessed a number of web-based screen capture tutorials on Captivate, which really assisted me in learning how to use the software. As you can see from the extract from my reflective journal below, it also reassured me that I was on the right track in creating a web-based tutorial to clarify difficult issues for learners.

> *They* (the online tutorials) *raised my understanding and knowledge to a much higher level that I would not have been able to achieve otherwise (Or if I did it would have taken a much longer time using trial and error approach). I still have some way to go to competently create my tutorial but I believe that I am now on the right track and have a basic understanding of how Captivate works.*

I also think that my own learning process has helped me to appreciate how effective an online tutorial can be to raise your learning to the next level.

I personally get very frustrated when I can't understand something or learn something new. So I love that feeling of getting of sudden understanding of a topic when someone or something helps you to learn and understand in way that you could never possibly achieve yourself. It is like a sitting in dark room and someone turns on the light. I would like to be the cause of someone else achieving that understanding of a topic.

Reflective Journal 14 May 2011

Figure 1. Web-based tutorial screenshot - The Chat Facility
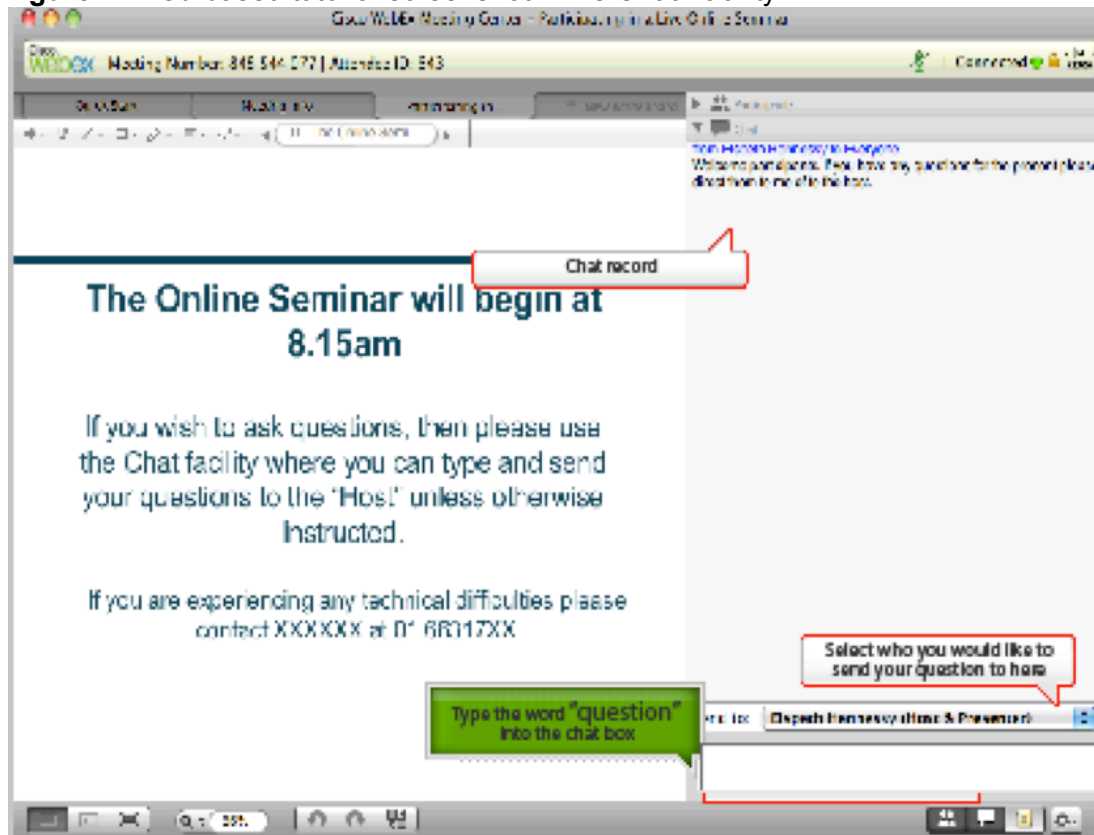
Outlining objectives

When recording the tutorial, I introduced the issues that would be covered at the very beginning to manage learner expectations (Yelinek et al., 2008; Sharma & Hannafin, 2007). By doing this I also hoped to make the 'cognitive processes' of the learning tasks explicit by outlining the objectives and then proceeding to deal with each objective in a procedural systematic manner (Sharma & Hannafin, 2007, p.33).

Timing and Structure

The web-based tutorial followed a sequential structure. I designed it in this way so first time users could view the complete step-by-step process of joining and participating in a live online seminar and would have a prescribed pathway to follow. When complete, the tutorial was just under ten minutes long, which was suitable as short web-based tutorials keep the attention of learners (Su and Kuo, 2010).

I considered adding a table of contents so that experienced learners could navigate directly to an area that interested them. However, I decided against doing this as I thought the tutorial was too short and that the control bar functions would be sufficient for learners who wanted to skip ahead.

Multimedia

I included a mix of multimedia to represent the content in the web-based tutorial in different ways and to ensure that it was 'sensitive to learner assumptions, needs and differences' (Sharma & Hannafin, 2007). The use of graphics, video and other media can help to engage learners and keep their interest (Brandt, 1997 as cited by Liaw, 2008, p.869).

A major section of the tutorial was comprised of demonstrative screen recordings with explanatory narration. When editing the individual slides, I included text captions to highlight areas I wanted to draw particular attention to. I inserted additional blank slides into some sections of the web-based tutorial so that I could add animated text to summarise points being made in the narrative.

Usability

In creating the tutorial I was guided by Nielsen's (1993) software usability guidelines (See Figure 2) and those specifically tailored to the creation of web-based tutorials (Mackey and Ho, 2008) (See Table 2).

Where possible, I used the learner's own language when recording the narration as recommended by Nielsen (1993). I hoped that the combined use of demonstration and captions in addition to narration would clarify any terms learners were unfamiliar with.

Table 2. Usability factors for Web-based Multimedia (Mackey and Ho, 2008).

Content	File size and response time	Screen size	User control
• Quality content • Ease of access • Useful information • Audience considerations • Combine audio and video to deliver content	• Small file size • Keep duration of each tutorial brief • Quick response time • Speed of access • Good video and sound quality • Streaming media format • Provide warnings about download time	• Design for accessible display in most browsers	• Standard menu control • Accessible navigation for play, pause, stop, rewind, and fast-forward • Status bar for loading and total file size

I had taken part in audio and video production as part of the Masters programme and the need for high quality audio and video was demonstrated through practical activities (Crotty, 2011b). The audio capture on Captivate produces high quality audio. Background noise can be silenced and overall volume can be leveled. The screen captures and slide recordings were of a high quality. I chose a screen size that would enable learners with commonly used browsers to see the full screen without having to scroll and to suit browsers with a low resolution.

Flash videos published by Captivate incorporate a generic player or control bar, which include buttons to enable users to play, pause, rewind, fast-forward, skip back, skip ahead and control volume. I included a short section in the web-based tutorial explaining how to use the player control bar. Flash videos also include a status bar, which indicates how long it will take the video to load, thus managing user expectations.

To ensure consistency in the design, I used the same colour scheme, font, and relative text size in all the textual slides and captions where possible (Nielsen, 1993).

Figure 2. Nielsen's (1993) Ten Usability Heuristics

Observe

Six participants acted as a pilot group to view and evaluate the web-based tutorial once it was complete. Five of the participants, Sandra, Jean, Patricia, Joan and Catherine are colleagues of mine (Please note that my colleagues' names have been changed). Sandra is also a member of the professional association. While not all of the participants had participated in a live online seminar before, each was aware of the context of the web-based tutorial.

I also asked my critical friend Maeve to participate in the pilot test. Maeve is an adult literacy tutor and resource worker. She is also currently studying for the Higher Certificate in Arts in Literacy Development. I believed Maeve's views on my research would be invaluable given her experience teaching and supporting adult learners. She also has a genuine interest in educational theory, and is enthusiastic about educating others and in furthering her own education. With regard to the pilot study, I thought it important to include Maeve. While she was aware of the context of the tutorial, she was unfamiliar with synchronous online courses

and my employer's live online seminars.

Each participant viewed the tutorial alone. It took between approximately ten and twelve minutes for each to view the tutorial. When they were finished, I interviewed them about their experience. On reflection, some of the questions I asked may have been leading so I decided to only use their suggested improvements as data in this research. The one exception to this was in the case of my colleague Patricia who had previously provided support for learners participating in live online seminars.

Suggested Improvements

After viewing the tutorial the participants suggested that the following changes be made:

Patricia recommended the following:

1. *Firstly, that the tutorial mention that when the learner adds in their name and email address the name they enter will appear on the participants' list in the live online seminar.*
2. *Secondly, she recommended I mention that the email address the learner enters need not be the one they used when ordering the live online seminar.*
3. *Thirdly, she suggested that I include a section outlining how the learner would check the volume on their computer.*

I also asked, if in her opinion, the main areas where learners experienced difficulties were covered. From her experience, she agreed that they were.

I had overlooked the first point that Patricia had raised. As I could not be sure what type of computer or what version operating system online learners might be using when viewing the tutorial or participating in a live online seminar I chose not to include a demonstration of how to check the volume I thought that it might just confuse.

Joan noted that the pace of the tutorial was a little slow when changing from one screen to the next in some places.

Sandra recommended that an interaction be added to the slide sixteen that deals with maximising the chat box, or alternatively, that the action be emphasised.

Maeve found that the text on the 'What this tutorial will cover' slide moved too quickly across the screen and did not remain on screen long enough to read. In our conversation afterwards she told me that she found interaction five a little confusing. The learner is asked to type the word question into the chat box. She thought that it would be best if the learner could type whatever they want. However, as the software requires that a specified word or phrase is entered, she recommended that I emphasise the word question using inverted commas.

Indirect Observation

I also recorded each of the participants testing the tutorial using Silverback – Guerrilla usability software. This added method proved to be very beneficial in analysing the participants' reactions to the tutorial. When analysing the screen and video recordings, I noticed areas where the participants experienced difficulties with the tutorial, some of which they had not mentioned when asked if they could suggest any improvements.

Patricia showed some confusion when asked to click on interactive buttons to proceed to the next sections of the tutorial in the first interaction at 1 minute 48 seconds and

interaction three at 3 minutes 55 seconds. In both cases she first tried to click on the instructive captions pointing at the interactive buttons rather than the buttons themselves.

From watching the screen recordings I observed that the web-tutorial no longer displayed the section in which I demonstrated using the chat facility. I am unsure how this feature was lost and I missed it when testing the tutorial myself.

Figure 3. Screen Capture Usability Test – Sandra
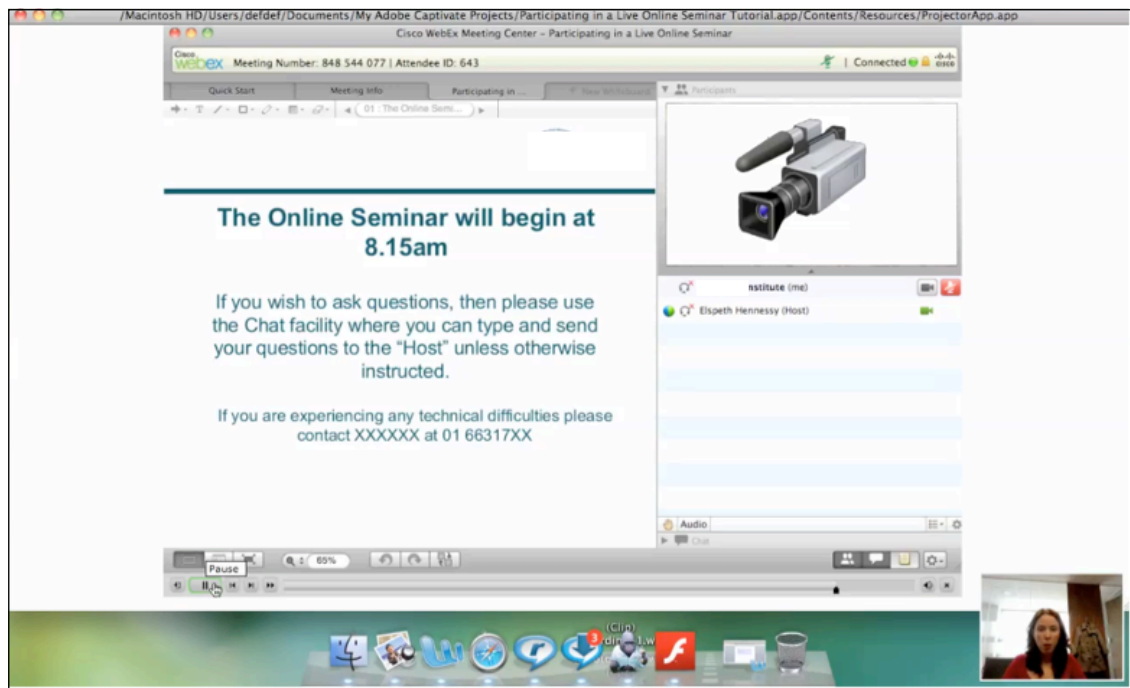
Feedback Meeting

At a feedback meeting in DCU on Wednesday 1 June 2011, I presented my web-based tutorial to my validation group who included my lecturer, Yvonne and dissertation supervisor Margaret Farren and my classmate Anne who provided me with some valuable feedback. They pointed out that I had not included any information on installing software to access a web conference for the first time, a very important topic for first time users that I had overlooked. They also suggested that I manage learner expectations by advising learners that they will be automatically muted when they join an actual live online seminar, and can only communicate online by using the chat facility. The group questioned the lack of a table of contents and a direct link to each of the sections of the tutorial. They also recommended that I replace the video camera image with a sample headshot.

Reflect

The evaluation of the web-based tutorial and the data generated made me reflect on my own practice and whether or not I was developing my values through creating a web-based tutorial as a scaffolding tool for online learners. I believe that in designing the web-based tutorial I considered and implemented a number of scaffolding features as identified in the literature I reviewed. In that sense, I believe that my value supporting and including learners through scaffolding their learning was developing through this cycle. However, when reflecting on the feedback   received I acknowledged that I may not have been truly empathising with learners, as in a number of ways I was not conscious of and considering

their needs. While I had analysed the difficulties that previous online learners had experienced, I had overlooked issues that could confuse and concern first time users. I had also overlooked guidance in the literature for accommodating high prior knowledge learners and those with advanced IT skills by not including a table of contents. In that respect I had not truly put myself in the place of the learners I was trying to assist and had not been 'sensitive to learner assumptions, needs and differences' (Sharma and Hannafin, 2007, p.42). By not displaying the objectives for sufficient duration I had not explicated the cognitive process.

> *Although I designed the tutorial as a scaffold that could be suitable for a range of learner ability, my own expert knowledge of the online seminar system led me to make assumptions in designing the tutorial and negate my value of scaffolding learners.*
>
> *I was negating my values as I did not consider that some learners might experience confusion, frustration and feelings of inadequacy watching the actual tutorial because I had neglected to give them enough time to read the topics to be covered, by not making the interactions as clear as they can be and by not giving them the tools to efficiently navigate the tutorial. Reflective journal 6 June 2011 (Appendix A)*

Cycle Two

Plan & Act

When creating the web-based tutorial in cycle one I had tried to cater for a range of student abilities after reflecting on the feedback I received from the participants and my validation group I acknowledged had not been successful in doing this. While I had actively applied my knowledge of scaffolding, I had not been considerate of some learners' needs. In the second cycle I implemented changes in the tutorial that were recommended by the participants in cycle one and my validation group, and from my own observations, which I hope will ensure that the web-based tutorial supports learners of varying ability and experience. I've included a short segment of the tutorial below. Unfortunately I am unable to include the finished product as it is branded with my company's logo.
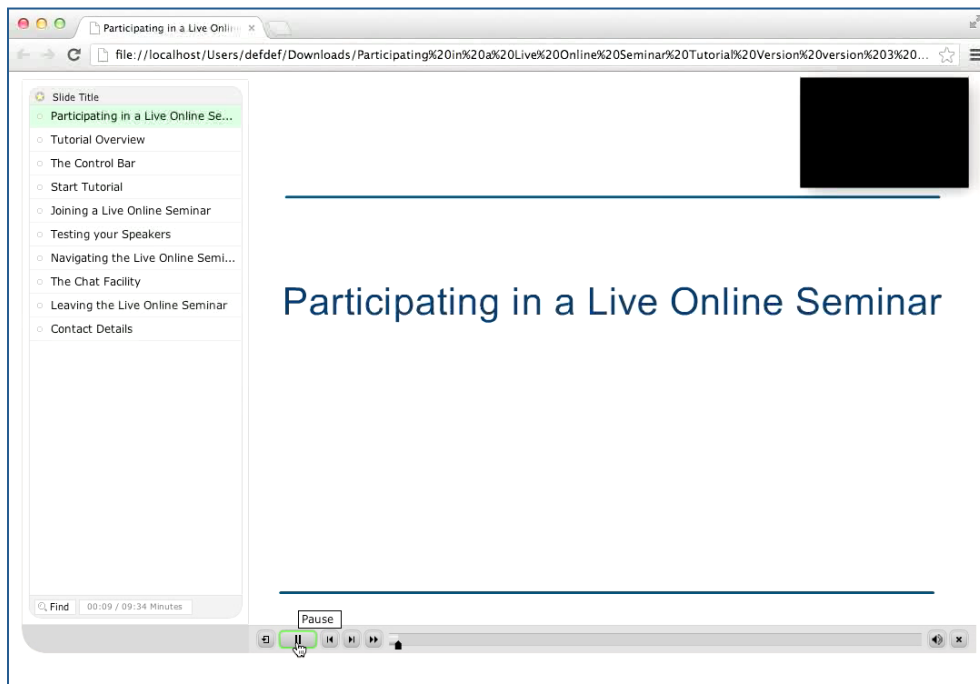
Video 1: Segment of final web-based tutorial

This time round I published the web-based tutorial in a .SWF format that could be placed on a website. I loaded the tutorial onto an ftp server from which it would stream. I generated a URL link to the web-based tutorial that could be linked to, or embedded in, a webpage. The web-based tutorial could also be accessed directly by clicking on the link generated.

Observe

To evaluate whether I had created an effective and usable web-based tutorial that supported learners, and whether in doing this I had remained true to my values I recruited four new participants as a second test group. Using the data collected from the evaluation, I planned to establish whether the web-based tutorial was usable and if the participants considered it to be an effective learning tool. I purposely chose a group with different levels of technical ability and prior knowledge to establish whether the web-based tutorial would be suitable for a wide range of learners. I also emailed a link to the web-based tutorial to my critical friend Maeve, who had viewed the first version, to get feedback on the changes I implemented after the first cycle evaluation. Please see her responses in Appendix E. In this cycle I hoped to generate evidence that I was learning to scaffold learners and was showing empathy by being sensitive to learners' needs.

I forwarded the link to the web-based tutorial by email to each participant. Each participant viewed the tutorial on a different windows personal computer (PC) and the tests took approximately ten minutes.

I asked the participants to complete an online questionnaire directly after accessing the tutorial to evaluate the usability of the tutorial and their perceived learning. I created the questionnaire on SurveyGizmo (http://www.surveygizmo.com/) and established that it would take participants approximately four minutes to complete. To pilot the questionnaire, I forwarded it to a colleague to determine its suitability as a research instrument. She agreed

to its suitability but pointed out a typographical error, which I corrected prior to sending it to the participants.

Analysis of Questionnaire Results

(The full questionnaire results can be found in Appendix D.)

The first three questionnaire statements dealt with the participant's level of computer skills and their prior knowledge of participating in a live online seminar. To the statement "I am a novice computer user" one participant agreed, one disagreed and two were neutral. Of the four participants only one had previously accessed a live online seminar.

The next set of statements dealt with the usability and design of the web-based tutorial. All participants either agreed or strongly agreed that both the quality of the audio and screen recording video was good.

Joan from the pilot group had thought that some of the tutorial was paced too slowly. The participants that evaluated the updated tutorial all strongly agreed that the audio and video were well-paced. The participants also all strongly agreed that the audio and video were well synchronised.

To evaluate the use of captions, the questionnaire stated, "The use of text captions was good" and the "The audio and text captions of the web-based tutorial were well synchronised", to which all participants either agreed or strongly agreed.

While these statements evaluated the usability of the tutorial they were also posed to establish whether the participants valued a number of representational forms of multimedia being used. It has been claimed that using a variety of multimedia has a positive effect on learning (Vaughan, 2008; Brandt, 1997 as cited by Liaw, 2008, p.869). The participants also agreed that the colour schemes used remained consistent throughout the tutorial

I had concerns about the screen size of the tutorial as I had to decrease the size of the screen to accommodate the table of contents. All of the participants either agreed or strongly agreed that the screen size was optimal for viewing. However each participant viewed the tutorial on computers with similar specifications.

Statements 13 and 14 dealt with learner control. All participants either agreed or strongly agreed that the menu control was convenient, with the exception of one who found the menu control statement not applicable.

I had not included an interactive table of contents in the first version of the web-based tutorial, however through receiving feedback at a validation group meeting in DCU, and by reflecting on the literature I had researched, I decided to include it to cater for experienced high prior knowledge learners. I cannot prove that it will assist high prior knowledge learners but all of the participants agreed or strongly agreed that it was a convenient feature.

Statement 15 moved on to the actual content of the tutorial. It stated, "The content was easy to understand". All four participants strongly agreed with this statement indicating that the content was clear.

Statements 16 and 17 dealt with the interactive simulations in the tutorial. By including interactions I hoped to encourage learner-content interaction and enhance the learning effectiveness of the tutorial. In the initial pilot study, two participants experienced difficulties with some of the interactions. This time around the participants agreed that the use of interactions was beneficial and that the screen moved quickly to the next section once the interactions were complete. One of the participants also left the following comment:

The tutorial was very clear and I liked the use of captions and the way I could interact with it.

All of the participants strongly agreed that the objectives of the tutorial were clearly outlined. This was important as the objectives were listed to manage learner expectations and to make the cognitive process of the tutorial explicit (Sharma & Hannafin, 2007).

The next set of statements dealt with the perceived learning effectiveness of the web-based tutorial. All four participants strongly agreed that the web-based tutorial was effective in helping them understand how to participate in a live online seminar. They also strongly agreed that it was an efficient method through which to learn how to participate in a live online seminar.

The tutorial was designed with the intention that it would be placed on my employer's website so that it could be accessed at will by learners. The participants were asked if they would have to view the tutorial more than once before participating in a live online seminar. Two of the participants disagreed and two agreed.

The final statement asked if participants would agree that the live online seminar would reduce the need to contact a member of staff for technical assistance. All participants agreed with this statement.

Participants also entered the following comments when they were asked if they could recommend any improvements to the web-based tutorial:

No I can't, I thought it was very clear and easy to understand.

No. well explained.

Reflect

The results from the questionnaire and feedback received from my critical friend (Appendix A) indicated that I had improved the web-based tutorial when compared to the feedback from cycle one. By recruiting participants with varied IT skills and prior experience, I hoped to discover whether the web-based tutorial could suit a range of learners' needs.

The questionnaire results show that all of the participants found the web-based tutorial to be usable. However, my critical friend could not view the full screen of the web-based tutorial without scrolling and she also thought that the software installation section might have been slightly unclear. So while the questionnaire results indicate that in terms of usability, I was conscious of and catered for, different learners' needs, there are still some areas that I could work on.

The results also indicated that I used the learner's language as the participants and my critical friend all found the content clear and easy to understand. I think that I successfully managed user expectations as the participants all agreed that the objectives of the tutorial were well outlined.

Mackey and Ho (2008) determined that usability had a positive impact on perceived learning. While I cannot empirically prove this link in my study, the findings from the questionnaire showed that the participants found the web-based tutorial to be an effective and efficient way to learn how to participate in a live online seminar. I think that these findings are evidence that the tutorial contained useful information and was contextually relevant (Sharma and Hannafin, 2007).

By implementing the recommended changes in order to better suit learner characteristics and manage learner expectations I believe that I was applying some of the scaffolding design guidelines as recommended in the literature (Sharma and Hannafin, 2007). By considering and catering for a range of learner needs, I believe that I was displaying my value of having empathy with learners.

Validation & Rigour

The triangulation of data collection methods and the inclusion of short two action cycles established rigour in my research. To test the validity and authenticity of the research, I presented my implementation, the data I collected, and the evidence I had generated at a validation meeting held in DCU on Wednesday 15 June 2011. I outlined how I believed I was scaffolding learners through my own learning and by creating a web-based tutorial and they agreed. I also met with my dissertation supervisor on a number of occasions to discuss my research and submit drafts of my dissertation. I met with my critical friend, Maeve on two occasions. She viewed both versions of the web-based tutorial and offered feedback each time. I also asked her to review the implementation chapter using the four criteria adapted by Farren (2006, p.102) from Habermas' framework of social validity. In her opinion, my account of my learning was comprehensive my value of scaffolding was revealed in my research (Appendix E).

Reflection on my Research

As I was unable to test the web-based tutorial with real users I cannot definitively say that it will support and scaffold learning. However, the data that I collected from the two action cycles indicates that I created an effective learning support for learners having difficulty participating in live online seminars. On evaluation, the participants in cycle two found the tutorial clear, easy to understand, usable and an effective learning tool. While I cannot claim that I have scaffolded learners, I can claim that I am learning to scaffold. In the design and creation of the web-based tutorial in cycle one and in the improvements I made to it in cycle two, where possible I implemented my knowledge of scaffolding along with web-based tutorial design guidelines. I had gained my knowledge of these topics through reviewing the themes central to this research project. From this perspective I believe that, through my own research and by creating the web-based tutorial, I am learning how to scaffold a synchronous online professional development course.

From my review of the literature, I have asked myself whether the tutorial itself could be termed a scaffold? The web-based tutorial was not individually tailored for each learner and as it is not conditioned to automatically fade, under Pol, Volman and Beishuizen's (2010, p.274-275) criteria, the tutorial cannot be considered scaffolding. However, Doering and Veletsianos (2007) did describe a screen capture video as scaffold in their study. When concentrating on difficulties experienced by users in designing the web-based tutorial, I was considering the theory of the tutee, and in my initial data analysis I investigated the theory of the task as recommended by Wood, Bruner and Ross (1976). The findings from cycle two indicate that participants found the web-based tutorial to be an effective learning tool, leading me to assume that it has the potential to help a learner to 'solve a problem, carry out a task or achieve a goal, which would be beyond his unassisted efforts' (Wood, Bruner and Ross, 1976, p.90). This type of assistance could potentially assist a learner to progress from his/her zone of actual development to his/her zone of proximal development (Vygotsky, 1978). When placed on my employer's website the tutorial could potentially serve as a hard static scaffold as introduced by (Saye and Brush, 2002). The learner would have the choice as to whether it

would fade, and once they no longer need to view the web-based tutorial, the responsibility for the task rests with them.

I believe that I am justified in claiming that I am learning to scaffold a synchronous online professional development course. The collaboration and participation of my colleagues, critical friend, validation group and dissertation supervisor were instrumental over both cycles. Their views and opinions were invaluable, as without them I might not have been aware of errors and poor practice on my own part. I had begun cycle one by investigating the needs and difficulties experienced by learners. My empathy with online learners, and my desire to educate was in essence the starting point of the research process. However, on occasion when acting in cycle one, I veered away from this focus. The research participants' feedback helped me to reconsider problems that other learners might experience if watching the web-based tutorial. By taking on board the suggestions made in cycle one I believe that I made the web-based tutorial suitable for a wider range of learner needs and zones of proximal development.

The Significance of my Research

Through two action cycles I generated evidence of how I was learning to scaffold a synchronous online professional development course. My research of scaffolding has shown that static supports such as the web-based tutorial I created may not technically fulfill the criteria of the scaffolding notion originally devised by Wood, Bruner and Ross (1976) and while the literature is at odds as to whether software supports should be described as scaffolds, it does recommend guidelines for their creation. Where possible I applied these scaffolding characteristics to the design of the web-based tutorial. There was evidence of my own learning in my application of the knowledge I had learned, through my research of scaffolding literature and in the design and creation of the web-based tutorial. While I was unable to evaluate the tutorial using real learners, findings of the study suggest that I have created a clear tutorial that was easy to understand. Participants in cycle two also claimed to find the tutorial to be an effective and efficient way in which to learn about participating in live online seminars.

While my research had originally been guided by my value of empathy and my desire to teach others, it became clear to me through further dialogue through the peer review process, and my own subsequent reflection, that values of inclusivity, accessibility and collaboration were in fact guiding my research. Through learning how to create an online tutorial with the aim of scaffolding learners, I was in essence attempting to include learners who I feared were being left behind in the move towards online CPD. I created the tutorial in an effort to simplify the access and navigational process to make synchronous online seminars accessible to all. The tutorial was improved and my own learning was steered through the collaboration of my peers, colleagues, lecturers and supervisor. My claim to knowledge was further steered and influenced by a web of betweenness through the relational dynamic contributions from the various reviewers of this article. In this article the educational values that motivated my inquiry were shown. Through my action and reflection cycles and the further dialogue of the peer review process I have developed my pedagogy of the unique (Farren, 2006).

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Appendix A - Reflective Journals

Sunday 17 October

Last edited: Sunday, 17 October 2010, 07:45 PM

I was left with a lot to think about after yesterday's class and I gained a lot of clarity about my own values from listening to my classmates and lecturers. It reinforced my belief in collaborative learning.I'll admit that I was completely stumped about "My ontological stance". I tend to get frustrated and upset with myself when I don't know or understand something. As was mentioned in the class this like everyone's individual reactions must be a product or a result of my upbringing, schooling etc.I actually don't think that I understand the meaning completely yet. I have looked up a few definitions which to be honest have confused me more.Would reactions like what I have spoken about above influence my ontological stance? Is your ontological stance more so concerned how you are or "be" rather than how you think of feel?I was eventually able to arrive at my current ontological stance though by quite a round about way and after a lot more frustration, questioning and upset! With the definition and examples written in front of me I found myself questioning my own educational values within my own context in my workplace.Yvonne mentioned inclusiveness, accessibility, caring and I asked myself if these values currently have a place in my workplace. A classmate mentioned about education now being treated as a money making business. This made me realise that the reason for my confusion and frustration about my values was my own cynicism. Brought about by effects of the current economic climate, the main priorities in the workplace seem to be selling, making money and besting the competition. What place do education values have in such circumstances? However when I looked past my own cynicism I thought about what has been achieved in my workplace over the past 9 months since CPD seminars have been brought online. Online seminars have made professional education courses accessible and inclusive in that they are very cost effective so do not discriminate against those who are not in a good financial position, are unable to travel, or who cannot take time during their working day to attend courses. Besides from these benefits, online CPD has encouraged many older members to use their PCs and learn new skills, which they otherwise would not have. We had one older member who, although had difficulties accessing the online seminar link as he had not previously ever clicked on a link before, really enjoyed the online experience once connected and gave great feedback.I then came to my

Ontological stance.I am a currently Professional Development Coordinator working for a professional association. My educational values are accessibility, inclusivity and collaboration and I believe that these values have a place in every learning environment.

Sunday 5 December 2010

Last edited: Sunday, 5 December 2010, 06:50 PM

I think that although I understood the principles of action research, I didn't really understand as I didn't think that I could do it myself. That probably sounds a bit ridiculous since all along we have been told that action research is not just for academics and that any practitioner can conduct action research. However I think my problems understanding and believing that I could engage in some action research was really because I did not recognise and respect my practice and my role as a practitioner. It seemed to be more the remit of those who actually teach - a really worthy profession. Reading Jean McNiff's book though has made me realise that action research is about improving your practice and justifying yourself as a professional. That led me to conclude that the way for me to recognise and respect my practice is to improve it.

My ideas are still a bit wishy washy here though.

I began to think about how I can improve e-learning in my workplace. As I have mentioned in previous journals, a lot of the time in work for me involves reaction to external events rather than action and reflection. A constant stream of deadlines. We haven't been quite as busy this last few weeks so it has given me the opportunity to catch up and to think about our services. Our e-learning online seminars have been in place for over a year now but I think the system by which users access the online seminars and in particular, how they are instructed to access the online seminars isn't great. There are short instructions on the website but we really rely on emailing people individually with lengthy access details after they have purchased an online seminar. We will be introducing a new website in the new year and I have drafted more detailed instructions for an online seminar Q&A session. It had been mentioned ages ago about the possibility of creating an online demonstration about online seminars. I was thinking of creating two detailed instructive online demonstrations using screen recording software. The first would explain exactly how one accesses a live online seminar and how they can interact with the speaker. the second would show people how they can access an on-demand online seminar. It is quite a small project. Alternatively I could

create one detailed demonstration that incorporates all parts but also gives people the option to jump to the section that interests them. I think that creating something like this would really improve the service and being a multimedia e-learning tool itself, it would from the outset familiarise people with learning online. I am also conscious that we have more or less moved classroom content directly online without giving much thought to a sustainable online learning environment. There are also other areas that I could concentrate on: sourcing a better technology through which to stream live events. The aim would be to improve the quality of the online seminar service. We are currently using webex but it has it's limitations.

Another option would be to introduce an assessment system that must be completed after attending an on-demand online seminar. We currently don't have anything like this in place.

However I think the most doable at the moment would be the creation of an online demonstration. I will first get some feedback from within the workplace to see if this is a good idea. I will also look for more ways to improve the service by looking back at feedback forms that were completed by those who attended online events over the last couple of months.

Sunday 8 May 2011

My choice of research question is intrinsically linked to my educational values and my decision to begin to live by them.

It has taken a lot of thought and reflection to identify my educational values. At times I have felt as if maybe I don't have any. I believe that is because I have not been living them in my day-to-day work as a professional development co-ordinator. In fact day-to-day pressures and stresses have at times buried them.

From examining my thoughts, feelings and opinions and reflecting on my views of education, which I have to some extent always had, I was able to re-identify my educational values.

I believe that education can set you free. Education can provide the right tools, knowledge and supports to progress, learn for yourself and achieve things you never before thought you could. I believe that educators should provide supports or scaffolds

28

for learners to assist them to learn basic skills and solve initial problems so that they can progress to the next step and begin to learn for himself or herself in a self-directed capacity.

No learner should feel incompetent, inadequate or unable to learn. Adequate support should be given to raise learners to the stage where the have an equal chance to progress as independent confident learners in their own right. This also involves my views on inclusivity. I believe that anyone can learn. Age, social standing, gender and previous misconceptions should not inhibit learning or giving someone the opportunity to learn.

Finally from a personal perspective, I believe that educators should give their very best. Although circumstances can make this difficult at times, educators have to strive to excel within their own capabilities.

Whitehead recommends that you look at what you are not doing to realise your educational values. By examining my role in the workplace I have been able to identify the areas in which I feel I am not living up to my values. In this sense I believe that I am a living contradiction but would like to begin to remedy this.

On reflection I realised that my position within the organisation, a professional development co-ordinator, made me question my right to ascribe to any educational values. I am technically not an educator in my workplace. I organise seminars, conferences and workshops but my role is purely in an administrative and organisational capacity and I am not directly involved in educating the course participants. However, my role has expanded in that I am now responsible for web conferencing live classroom events and administering the professional development e-learning initiatives.

Saturday 14 May 2011
I've been familiarising myself with Captivate again today to learn the basic functions to create my WebEx (ITI live online seminar tutorial). The tutorial will consist of a series of slides and screen recordings with audio and simulations. I intend to use the tutorial as a scaffold to assist learners participating in WebEx online seminars. It is my hope that

demonstration and simulation will help learners to become familiar and confident using WebEx software so that they can then concentrate on the content being delivered.

This journey learning how to use Captivate has put me in the position of the learners I am trying to help. It illustrated how online screen recording tutorials can assist learners to learn about new software and how to use.

I would consider myself to be quite proficient using software and would generally find it easy to quickly pick up the new skills necessary to successfully navigate and operate unfamiliar software. I would generally explore the software myself testing out the different functions until I figure out how to use it. However, I had never used Captivate before and as I mentioned in a previous journal, I found it quite difficult to use and impossible to intuitively know what functions to use or buttons to press to get it to do what I wanted. I had in fact hit a brick wall that I could not get over without some outside assistance.

I began by searching for adobe captivate tutorials. The first few I accessed were screen recordings with simulations with no audio. At fist I found these hard to follow. I then search for more tutorials and found an adobe channel on YouTube. This channel contained screen recordings with simulations, captions and audio. Watching these tutorials really helped me to understand how to use Captivate and straight away afterwards I could successfully add a new slide, text caption, text insert box and click box. They raised my understanding and knowledge to a much higher level that I would not have been able to achieve otherwise (Or if I did it would have taken a much longer time using trial an error approach). I still have some way to go to competently create my tutorial but I believe that I am now on the right track and have a basic understanding of how Captivate works.

I also think that my own learning process has helped me to appreciate how effective an online tutorial can be to raise your learning to the next level.

I personally get very frustrated when I can't understand something or learn something new. So I love that feeling of getting of sudden understanding of a topic when someone or something helps you to learn and understand in way that you could never possibly achieve yourself. It is like a sitting in dark room and someone turns on the light. I would like to be the cause of someone else achieving that understanding of a topic.

Monday 6 June 2011

My reflections on cycle one. Although I designed the tutorial with as a scaffold that could be suitable for a range of learner ability, my own expert knowledge of the online seminar system led me to make assumptions in designing the tutorial and negate my value of scaffolding learners.
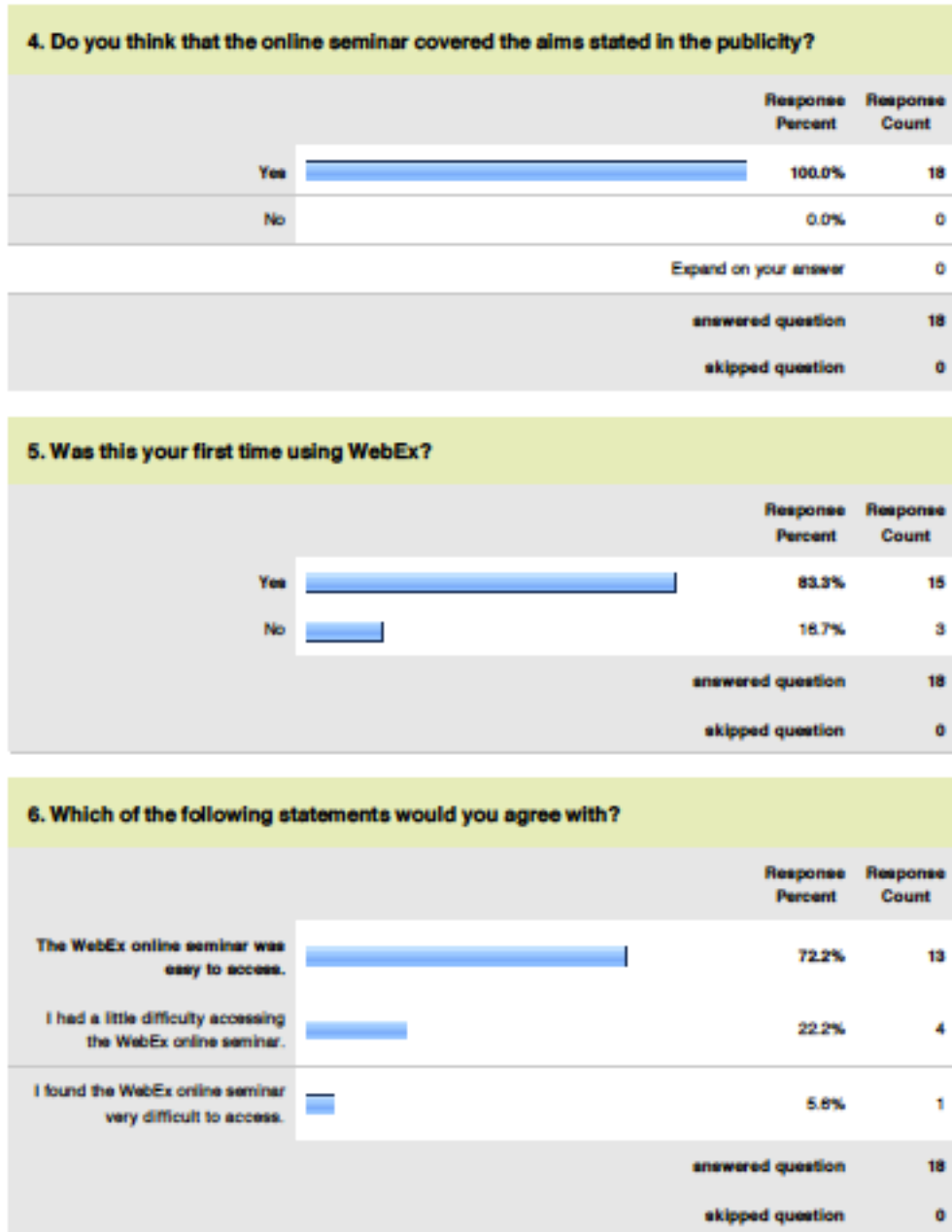
I decided to use animated text on the "what will this seminar cover" screen as I thought it would be a good design feature. However I did not consider that learners who were completely unfamiliar with live online seminars and who were drawn to the written word would appreciate it if the text remained on the screen for longer. I also ignored the design guideline that states that the objectives of the tutorial should be plainly outlined at the beginning of the course. While the narration dealt with the guidelines, I did not consider those who prefer the written word.

I discussed using a table of contents with my CF after she had watched the online tutorial. At the time I argued that the tutorial is too short to merit the use of a table of contents. I also put forward this view to my supervisor and critical classmate at a supervisor meeting. However on reflection, I read back over the literature where it specified that giving learners the opportunity to navigate the tutorial as they require increases learner satisfaction. It became apparent that I had not catered for the more experienced learner who wanted to easily navigate to the section that interested them.

I also did not consider that learners would not know that the name they entered into the Join Meeting page would be displayed on a participants' list when they entered the live online seminar or that they might experience some confusion as to which email address to enter. I also did not realise that some of the captions designed to assist learners with the interactions might actually confuse them.

I was negating my values as I did not consider that some learners might experience confusion, frustration and feelings of inadequacy watching the actual tutorial because I had neglected to give them enough time to read the topics to be covered, by not making the interactions as clear as they can be and by not giving them the tools to efficiently navigate the tutorial.

Appendix B - Live Online Seminar Email Feedback

4. Do you think that the online seminar covered the aims stated in the publicity?

	Response Percent	Response Count
Yes	100.0%	18
No	0.0%	0
Expand on your answer		0
answered question		18
skipped question		0

5. Was this your first time using WebEx?

	Response Percent	Response Count
Yes	83.3%	15
No	16.7%	3
answered question		18
skipped question		0

6. Which of the following statements would you agree with?

	Response Percent	Response Count
The WebEx online seminar was easy to access.	72.2%	13
I had a little difficulty accessing the WebEx online seminar.	22.2%	4
I found the WebEx online seminar very difficult to access.	5.6%	1
answered question		18
skipped question		0

7. Would you participate in future WebEx online seminars?

		Response Percent	Response Count
Yes		100.0%	18
No		0.0%	0
		answered question	18
		skipped question	0

8. Do you have any suggestions for future online seminars?

	Response Count
	8
answered question	8
skipped question	10

9. Do you have any additional comments?

	Response Count
	2
answered question	2
skipped question	16

Q2.	Do you think that the online seminar adequately covered all of the relevant areas?	
1	However it was difficult to follow in the second half as the presentation slides on powerpoint were nolonger showing on screen and you had to open the notes that were e-mailed to us and flick into the powerpoint presentation there. The presentation had worked in the first half but after the break it didnt so it may have been something technical.	Feb 11, 2011 5:56 PM

33

Q8. Do you have any suggestions for future online seminars?

1	Just to offer as many of your seminars as possible to online viewers as it is an excellent option.	Feb 14, 2011 10:24 AM
4	We will certainly do more online courses. There is a big saving on travelling time and cost of transport.	Feb 10, 2011 6:07 PM
5	It would have been useful if the camera angle had shown the slides behind the speakers. Or it may have helped if it was possible to print off slides/notes from the website prior to the Seminar. For some of the worked examples it was difficult to follow as I could not see the text. So either being able to view the slides or have the slides would have combatted this.	Feb 10, 2011 6:04 PM
6	As the slides went blank during the presentation I would be obliged if this wouldn't happen in future	Feb 10, 2011 5:25 PM
7	The more seminars that are provided on-line the better, it cuts down on costs and time lost to travel for members.	Feb 10, 2011 5:03 PM
8	more courses should be held online.	Feb 10, 2011 4:59 PM

Q9. Do you have any additional comments?

1	Well done!!	Feb 14, 2011 10:24 AM
2	The first speaker was very difficult to hear, when the facilitator was contacted she did her best to improve the sound, but it improved marginally. The second speaker was perfectly audible. Speakers should be reminded if there is an on-line audience to ensure they use the microphone provided so that they can be heard	Feb 10, 2011 5:03 PM

Appendix C - Live Online Seminar Email Feedback

Elspeth Hennessy

From:

Sent: 02 March 2010 09:57

To: Elspeth Hennessy

Subject: RE: Meeting invitation: Back to Basics - VAT on Property

Hi Elspeth,

A few comments on my online attendance at this morning's seminar:

- When I went through the log in procedures, I wasn't asked for a password. Instead a "pop up" appeared which gave various options in relation to joining the conference. It was only through trial & error that I eventually succeeded in getting connected. If I was "attending" a future seminar, I wouldn't know what to do as I'm not sure what triggered the connection this time.
- At the outset,   advised that the slides were for a longer seminar and he would not be following them. However he was referring to slides but did not advise which ones. It subsequently transpired that he was mainly using one slide but the benefits of this were lost to the online audience.
- I tried to send a message through the Chat Box and although I followed the instructions, I couldn't type in my question. Heather Madden sent a message that comments could be made through the chat box, but even then I was unable to type anything in it.
- It wasn't possible to hear the chairperson's comments even at full volume.

I think the concept is good and the above comments are raised to make my participation easier in the future.

Regards,

Appendix D - Questionnaire Results

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A
1 1. I am a novice computer user		1	2	1		
2. I am an expert computer user		2	2			
3. I have previously participated in a live online seminar	1	2			1	
4. The audio quality of the web-based tutorial was good				1	3	
5. The speed of the audio was at an appropriate level of instruction					4	
6. The screen recording video quality of the web-based tutorial was good				1	3	
7. The speed of the screen recording video was at an appropriate level of instruction					4	
8. The audio and screen recording video of the web-based tutorial were well synchronised					4	
9. The use of text captions was good					4	
10. The audio and text captions of the web-based tutorial were well synchronised				1	3	
11. The colour schemes used in the				1	3	

web-based tutorial were consistent						
12. The screen size of the web-based tutorial was ideal for viewing				1	3	
13. Menu control of the web-based tutorial was convenient					3	1
14. The table of contents was convenient				1	3	
15. The content was easy to understand					4	
16. The use of interactive simulations was beneficial				2	2	
17. Once the interactions were completed the next sections displayed quickly				1	3	
18. The objectives of the web-based tutorial were clear					4	
19. The web-based tutorial was effective in helping me to understand how to participate in a live online seminar					4	
20. The web-based tutorial was an efficient way to learn how to participate in a live online seminar					4	
21. I would have to watch the web-based tutorial more than once before participating in a live online seminar		2		2		

22. Watching the web-based tutorial would reduce the need to contact the live online seminar provider with technical questions				1	3	

23. Can you recommend any improvements to the web-based tutorial?

No I can't, i thought it was very clear and easy to understand.
No. well explained.

24. Have you any other comments about the web-based tutorial?

It was very clear and would encourage new users to online seminars well done great job
The tutorial was very clear and I liked the use of captions and the way I could interact with it.
I have said above that it should reduce the need for contacting the service provider with technical questions and I do think it should. In my experience though people are less likely to take the time to go through something and attempt it themselves if they think it's quicker to just call someone particularly where IT systems are involved. I think the communication of a tool such as this is also very important to train people into using it as a first resort but that's something to consider outside of the web-based tutorial itself.
well explained.

Appendix E - Correspondence with Critical Friend

Elspeth Hennessy <elspeth.hennessy9@mail.dcu.ie>

<div align="right">

11 June 2011 14:50

</div>

To: maevhen003@googlemail.com

http://Participating%20in%20a%20Live%20Online%20Seminar%20Tutorial%20Version%20version%20
3%202%20resized/Participating%20in%20a%20Live%20Online%20Seminar%20Tutorial%20Version%
20version%203%202resized.htm

Hi,

Here's a link to the web-based tutorial with the changes recommended by participants implemented. The changes that I put through are as follows:

1. I removed the animation from the text on the "What will this tutorial cover?" screen. Each point still appears as the narration begins but appears all together and remains until the end of this section. I also did this in the "Leaving an online seminar" screen

2. I added a table of contents and edited the narration on the "What will this tutorial cover?" screen to advise learners that they can skip to the section of their choice by clicking on the relevant entry on the table of contents on the left hand slide of the screen.

3. I resized the tutorial so that learners can still see the full screen with the table of contents added.

4. From analysis of the screen recordings, I reworded the captions for interactions 1, 3 & 4 to clarify where learners should click to proceed to the next section of the tutorial. After receiving feedback from P4 I also reworded the caption for interaction 5 to emphasise that the word "question" should be typed in the chat box by placing the word question in quotation marks and increasing the size of the word question.

5. I added in narration in the Join Meeting section to specify that the name learners enter into the name field will appear in a participants' list in the live online seminar page. I also clarified that the email address entered does not have to be the one used to order the live online seminar.

6. I added emphasis to the control to click when maximising the chat facility by inserting a zoom area.

7. I added a new section dealing with the installation of software if this is the first time accessing a live online seminar.

8. I edited the narration in slide 12 to inform learners that they will be automatically muted when entering the live online seminar

Would you mind having a look and sending on any feedback you might have?

Thanks,

Els

Maeve Hennessy <maevhen003@googlemail.com>

12 June 2011 20:32

To: Elspeth Hennessy <elspeth.hennessy9@mail.dcu.ie>

Hi Elspeth,

I was able to read and had the time to comprehend the text on 'What will this tutorial cover?', now that the animation has been removed. I found that a great help.

Although I had not felt it was necessary on my first viewing, I find the new table of contents very helpful and practical, making this tutorial much more effective and professional.

I had no difficulty this time following the instructions to type in the word 'question', whereas I had been confused previously, when I thought it must mean to type in my own or some other question. The changes here really clarify it for me.

Should the upper half of the new page dealing with installation of software, be clearer, as it seems a little difficult to see?

Can the page be resized so the top and bottom of the page may be seen at the same time - especially in order to see where to click, as per instructions?

All in all, it is very clear and well set out. Your voice has a perfect tone for the job, being crystal clear and pleasant on the ear. The pace both of speech and the text is just right.

Many thanks,

Maeve

Elspeth Hennessy <elspeth.hennessy9@mail.dcu.ie>

12 June 2011 20:57

Draft To: Maeve Hennessy <maevhen003@googlemail.com>

Thank you very much for the feedback

Maeve Hennessy <maevhen003@googlemail.com>

27 June 2011 07:40

To: Elspeth Hennessy <elspeth.hennessy9@mail.dcu.ie>

Hi Elspeth,

Sorry for delay in feedback. Well done on your tutorial and also the implementation chapter, setting out your values and how these are implemented in the tutorial. As an adult literacy tutor, working in adult basic education, I share your values of empathy (Rogers and Maslow) and philosophy of social constructivism, in which scaffolding (Vygotsky) is an essential part of the learning process…

 … Are my educational values clearly revealed and justified?

Very much so – the stress is very obviously on empathy and sensitivity towards the learner and his individual needs, style of learning and ability/level of computer literacy. It is equally on the value of scaffolding in tutoring – making it possible for a learner to move from 'their actual and present zone of development to their proximal zone of development' and then, as you say, when they no longer experience the need for this scaffold, they themselves simply 'let it fade'. ..

Appendix F - Action Plan

I was particularly drawn to McNiff's (2010) action plan when initially choosing my research inquiry and it also guided me in planning the implementation of my research.

What is my concern?

I am concerned that a section of learners participating in synchronous online professional development courses are not receiving sufficient training and support prior in the synchronous online application. Some are experiencing difficulties getting access to courses, navigating the application and using the interactive features.

Why am I concerned?

The difficulties experienced by online learners may potentially act as a barrier, preventing them from having an effective learning experience. Learners may also be discouraged from participating in future synchronous online courses. I am concerned that my employer and I are not doing all we can to support and train online learners. By not adequately supporting learners I am concerned that my practice is not being guided by my values of having empathy with, and scaffolding learners.

How do I show the situation as it is and as it develops as I take action?

To show the situation as it is I will refer to feedback from online learners who have participated in synchronous courses and to member needs analysis surveys distributed to the professional association's members. I will also refer to my colleagues' and my own observations.

To show the situation as it develops, I will keep a learning journal documenting the research process and progression. I will also record correspondence with my critical friend, and questionnaire results and observations of a pilot group and research subjects.

What can I do? What will I do?

By attempted to understand learners' needs and the problems they are experiencing I can then look at ways to assist them and provide them with the appropriate supports so that they can overcome their difficulties. I will research the theory of scaffolding along with other major conceptual themes to discover how I can learn to scaffold learners participating in synchronous online professional development courses.

42

For the purposes of this study I will investigate how to apply the knowledge I have learned through my research, to the design and creation of a web-based tutorial. The objective of the web-based tutorial is to teach inexperienced learners the steps involved in joining and participating in a live online seminar. It aims to enable them to master the procedural tasks involved so that they are free to concentrate on the seminar content and their professional development. Through carrying out this research I intend to convey how I have used my values as guiding principles and how they can be used as living standards against which my practice can be judged.

How do I generate evidence from the data?

Using my values as standards of judgement, I will examine and sift through the data generated in the implementation of my research. Through this process I will identify evidence that I have or have not lived by my values.

How do I check that any conclusions I come to are reasonably fair and accurate?

To ensure that the conclusions I come to are reasonably fair and accurate I will present them along with the implementation of my research to my critical friends and validation group. I will test the validity of my findings by measuring them against the critical feedback they provide (McNiff 2010, p.104). To collect data I will use a number of research methods. The triangulation of data collection methods and the inclusion of two action cycles will establish in my research.

How do I explain the significance of my action research?

By showing that my findings are valid and my study rigourous, I hope to establish the quality of my research. By showing that I have lived my values I hope to prove that my research is significant.