

Cats, Dogs and Pheromones: researching the student experience

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Abstract. Pheromone Therapy is a unique online course pioneered by the University of Lincoln and delivered through the university's virtual learning environment. The course adopted innovative practices such as induction activities designed to embed the skills required for successful online learning, a range of interactions with content and focus on opportunities for socialisation including 'café' forums and a student gallery. Retention is a key issue with distance delivery (Simpson, 2003) but listening to the student voice is only a comparatively recent initiative. Past studies have focussed on non-completion (Yorke & Longden, 2008) or the student experience on campus (JISC, 2007). Pheromone Therapy was an opportunity to capture data about distance learner's experience of learning in isolation and collect individual responses to the course design. Findings provided a rich source of information for the construction and delivery of online courses in the future. Social aspects of learning online have been suggested as prime motivators in building a sense of collegiality. Pheromone Therapy was designed to include opportunities for social interaction but students demonstrated how the learning experiences which were situated in practice, with opportunities for shared participation, created the greatest cohesion and sense of community.

Cats, Dogs and Pheromones: background

The last 10 years has seen the introduction of pheromone-related products for the management of a range of behavioural problems in small and companion animals; typically domestic cats and dogs. There was no formal or independent qualification for those seeking a wider knowledge of these treatments and, in response to the increasing awareness among veterinary professionals, Professor Daniel Mills at the University of Lincoln, expressed interest in designing a course to fill this gap. The author had a remit to support online distance delivery and was asked to lead the

development of this a short undergraduate level course. The full title was 'The clinical application of pheromone therapy for the management of problem behaviour in companion animals'. Throughout this paper the course is referred to as Pheromone Therapy.

Pheromone Therapy was delivered via a 'conventional' virtual learning environment (VLE). The decision to use an institutionally hosted resource, and not to incorporate 'new' Internet social networking tools, was underpinned by the philosophy that the technology should enable learning and not direct it. This is not to say that new Internet technologies, such as participant led blog and wiki software, do not have educational validity, but it was felt important to ensure a digital baseline. This could be achieved by using the VLE already familiar to staff, thus reducing their digital learning curve, as well as maintaining existing technical support including the ICT Help Desk. The primary focus was to create an effective learning experience using resources that enabled social and pedagogical interaction. With appropriate content, a typical virtual learning system could provide the balanced mix required.

This paper will look at the theoretical and the practical elements considered essential for the construction of a successful online learning area. It will then explain the research methodology before examining if the collected data supported the design decisions. The paper will conclude with suggestions for future courses.

Digitised Distance Delivery

Initial distinctions between 'digital natives' and 'digital immigrants' were useful indicators of an apparent digital divide. The labels distinguished those brought up in technically intense environments compared to those with more analogue roots (Prenkys, 2001) The debate has evolved during the past decade and the divide is now seen as less about access to technology and more about the ways in which it is used (CIBER, 2008). However, the phraseology remains as a reminder that in a fast evolving digital world, not everyone has equal engagement.

Educational technology has been adopted, to a greater or lesser degree, across the UK higher education sector (UCISA, 2008). National strategy promoted and supported the development of the virtual learning environment (VLE). Initially seen as virtual substitutes for transmission models of learning, the VLE was soon underpinned by more constructivist pedagogies. Rapid developments led to more socially informed constructivist models that were instrumental in the construction of frameworks of virtual interaction (Laurillard, 2002). Distance delivery, traditionally involving books, video/audio tapes and the telephone, was particularly suited to the opportunities for online discourse offered by the new virtual learning environment.

It is easy for developers working with education technology today to become complacent about digital literacy. Teams responsible for the design and delivery of distance learning need to be wary of assuming computer competence. Research shows that retention is a key issue (Simpson, 2003). Students who drop out often fail to give reasons for withdrawal but those uncomfortable in their virtual environment are less likely to be successful online learners.

Students choosing distance learning may find they not only need to re-engage with a learning environment but also be motivated to engage with digital practice as well. Unlike recent school leavers, distance learning traditionally attracts those with commitments such as employment or family responsibilities as well as those who may have been out of education for some time. Expert in their own subject area, these

students may not have extensive experience with computers and are presented with a dual learning curve; one where the challenge is technical as well as pedagogical and one that is often faced in isolation. It is also worth bearing in mind that existing computer confidence is not always a precursor of competence for learning; for example browsing the Internet does not necessarily offer experience with online discussion. When the prime delivery mechanism is virtual, any student cohort is likely to present an eclectic mix of prior digital experience. Building in time and opportunities for students to find their digital feet, as well as their academic ones, is a key to creating successful online learning experiences.

Effective learning design

Designing distance delivery requires a multi-team approach, one which includes the lecturers, learning developers and learning technologists alongside the appropriate library and administrative support staff. It is a complex undertaking and the time required to set up an online course is often seriously underestimated. An effective learning experience requires more than digitised lecture notes and handouts; the resources have to substitute for face to face contact as well as providing stimulus and motivation.

Effective learning experiences rely heavily on active user engagement with pedagogically informed content, yet accounts of online learning have been criticised for failing to draw upon theoretical positions and for following commonsense rather than theoretically informed design (Conole et al., 2004). When designing the Pheromone Therapy course, the team followed principles of social constructivist learning to inform the development of collaborative opportunities for tutor and peer support. This support, commonly known as scaffolding, exploits the Zone of Proximal Development defined by Vygotsky (1978) as the distance between the learner's current and potential cognitive development. A key proponent of support scaffolding is interaction (McLoughlin, 2002). This is achieved through opportunities for dialogue ensuring a continuing 'conversation' between course participants (Laurillard, 2003) and collaborative activities for the application of learning to practice. Meaningful engagement with content situates learning within lived and shared experience; furthering the development of the social, peer and task relationships described by Wenger (1998) as essential to the construction of a community of practice.

A model of instructional design creates a framework of learning outcomes, activities and assessments which can be visually broken down into discrete, manageable chunks. Traditional instructional design taxonomy (Fardouly, 1998) encompassed the key stages required. For Pheromone Therapy, these stages were given descriptive names which were felt appropriate to the processes. These stages were:

- **Plan (-ing)**
- **Prepare (-ing),**
- **Practise (-ing),**
- **Deliver (-ing)**
- **Evaluate (-ing)**

The model was given the abbreviated name '3PD'. Traditional models failed to acknowledge the disproportionate investment of time and resources the development

of effective online learning entailed. In addition to the five essential stages mentioned above, two key processes of Induction and Interaction were identified and aligned with the stages of Planning, Preparing and Practicing. Figure 1 shows a diagrammatic model of the process.

Induction

The aim of Induction was initially to create a pre-course space for dealing with technical problems without impacting on progress once the course had started. It would include activities focused on preparation for learning and establishing the skills necessary to operate successfully within a virtual environment including net-etiquette and an agreed code of conduct for online conversation. Induction is the time to introduce the distinct language associated with higher education and academic development activities containing introductions to critical thinking and independent learning. Induction is also the optimum time to begin building social connections while increasing individual levels of digital confidence. Inter-personal communication is a key substitute for face-to-face contact and to further social presence, Induction introduced social activities including ‘café’ type discussion areas and invitations to contribute to a gallery of student photographs. Interaction in forums can produce powerful learning experiences but resources also need to support and enable interaction (Laurillard, 2003).

Interaction

The Interaction element of the model provided opportunities to ensure social, cognitive and teaching presence; identified as requirements for stimulus, motivation and self assessment in online learning environments (Garrison & Anderson, 2003). The focus of this section of the 3PD model was the repurposing of existing face-to-face content into small activity-based learning objects. Pheromone lectures were created as audio-visual tutorials, with narration, animation and video, and provided on CD-Rom to minimise video download time. Each tutorial was supported by supplementary activities including formative and summative assessments. These included a range of interactions such as multiple choice and drag and drop and contained feedback carefully designed to extend opportunities for learning. Principles of inclusive design were adhered to throughout construction of the learning area and all multimedia content was accompanied by appropriate transcripts. Inter-activities were provided in a variety of formats including textual alternatives and an extensive pre-course evaluation ‘tested’ the interactive content with a variety of users and assistive technologies.

Research into the student voice

Research into the student experience of learning online is relatively recent and has revealed a range of competencies and preferences. Confident users frequently exhibit habitual behaviours such as skimming the surface rather than investigating topics in depth suggesting that, even where students claim technical experience, academic literacy cannot be assumed (CIBER, 2008). The Joint Information Systems Committee (JISC) acknowledges the previously “...*under-researched and imperfectly understood world of the learner in a digital age*”. (JISC, 2007: 3). In

2006 JISC made available the findings of two studies; LEX, the JISC Learner Experience of eLearning (Creanor et al., 2006) and LXP, the JISC Student Experiences of Technologies (Conole et al., 2006) both of which sought to address the lack of appropriate user-information regarding teaching and learning technologies. A scoping study, carried out prior to the LEX and LXP projects, and with the remit to determine the most appropriate areas for future investigation found little research into the learner experience. *'There is in general a scarcity of studies of the learner experience [of e-learning]. In particular there is a scarcity of studies that can be characterised as expressing a learner voice" i.e. in which the learners' own expressions of their experiences are central to the study'*. (Sharpe et al., 2005:2)

The scoping study drew on published studies of e-learning in higher education in the UK. The majority of existing research reflected issues 'related' to online distance learning but often had a narrow focus for example the specific use of online discussion groups or looked at postgraduate provision. The criteria for inclusion in the review listed a preference for those studies 'which drew on blended rather than purely online scenarios' (Sharpe et al., 2005: 2).

Pheromone Therapy Research

Researching into the student experience of Pheromone Therapy was seen an opportunity to gain valuable data which would both inform delivery to future cohorts and be of wider interest across the university. It was felt that the standard course evaluation would not provide the required focus on Induction, Interaction and socialisation; elements with the potential to become foundational elements in the development of future courses. The decision to run a small scale research project was made during week 10 of the inaugural run when students were still actively engaged with the tutorials. An initial enquiry, via a discussion group thread, elicited a positive response and 18 students (from a starting cohort of 25) agreed to participate.

Phase 1 of the research began in November 2007 with the distribution via email of an online questionnaire. One student opted out at this stage leaving a total of 17 responders who returned completed answers. The online questionnaire included an expression of interest requesting volunteers for Phase 2 of the research. This would investigate the experience of learning online in more depth and be by either email or telephone interview, depending on student preference. 15 of the original 17 replied to this question; two opted out of further research leaving 13 participators for Phase 2.

Methodology

The study was based on a phenomenological approach to social research, which allowed an examination of how respondents construct, attach and share the meaning of a particular phenomenon, in this instance, the phenomenon of online learning (Schutz, 1962). This approach allows the research to explore in much greater detail the student experience and the value of the online learning experience in terms of provision and pedagogy. The research was administered using asynchronous email interviews with the 2007/08 student cohort. Originally students were given a choice between email or telephone interview. The rationale for this approach was based on the impracticality of interviewing students in person due to the geographical dispersion of the respondents, which is quite common with online learning cohorts. In

practice there were difficulties with arranging telephone interviews with respondents who were all fully engaged with demanding full time careers. *'From a research prospective, some of the information I got from students was insightful and extremely useful, however, this needs to be done much closer to the end of the course and respondents had moved on and were no longer interested, or had the time, to participate in the research'* (Saunders 2009)

Due to these constraints it was decided by the project team, in consultation with the respondents, that the most practical approach to data collection would be asynchronous email interviews, which respondents could complete at their own convenience. Although this method of data collection allowed the research to get access to respondents that would have otherwise declined to participate in the research, there were a number of disadvantages, which are aptly highlighted by Bryman (2004: 477). These were of establishing a rapport between the researchers and respondents and the length of time it took to complete the data collection stage (3 months). In addition, there were a small number of respondents who did not fully complete all aspects of the interview, which led to a small number of minor gaps in the data. Despite these minor drawbacks, the method of data collection allowed access to data that would have otherwise been unreachable.

The data was analysed using discourse analysis which allows the exploration of language and discourse at a level that allows an in-depth examination of how competing versions of reality are constructed and represented through language. There a number of approaches to discourse analysis, however, the one adopted by the research is based on the work of Potter (1997), which is both anti-realist and constructionist in its ontological and epistemological approach, respectively, and thus is an entirely logical form of analysis for a phenomenological methodological approach to the research design. This analytical approach is significant in the fact that it allowed the research to explore the different and, at times, competing versions of reality constructed by the respondents. Moreover, the approach also is advantageous over other forms of language data analysis such as content analysis in that it can be applied to other forms of communication such as the written word (Bryman, 2004: 369), and thus is appropriate for an online platform that is heavily, if not solely, reliant on the electronically written communication.

Research Findings and Discussion

The value of the Pheromone Therapy course lay in its original features; the development team identified three areas they felt were paramount to an effective online learning experience and research questions were built around uncovering evidence to support these proposals.

- An induction period which recognised the need for ensuring students had the technical skills required to be effective online learners.
- A focus on interactivity to ensure resources engaged, motivated and provided stimulating learning experiences.
- Opportunities for social interaction were believed to substitute on campus face to face contact and support the development of a community of shared experience and practice.

The induction phase of the course, designed to ensure students had the necessary technical skills to be successful online learners, lasted for two weeks. This was thought to be adequate at the planning stage but students reported that they would

have liked a longer period of time to become accustomed to the virtual environment. One student reported *'I would have appreciated receiving the induction materials earlier than I did'* while another said *'I recommend that you get the materials out at least a month before the start so all kinds of glitches can be sorted.'*

These comments emphasise the importance of not under-estimating the value of pre-course preparation. Induction assumes that confidence with computers should not be predicted. However, developing technical confidence may be an additional positive outcome of studying online. The number of students who rated their computer skills as 'not confident' at the start of the course (41.2%), had significantly increased their rating to 'confident' by the end of the course (75%). When students were asked how they rated their confidence with using the technology, they typically reported positive benefits: such as *'[I now feel] more confident with future online learning programmes since participating in this one'*

Students were unanimous in reporting a beneficial learning experience; they valued the course content but found the pace too fast with many students suggesting fortnightly rather than weekly tutorials. This may have indicated a need for a wider spread of the workload or the response may have been a reflection on the students' pre-existing level of digital skills. If delivery time is restricted for any reason then including a practice tutorial in the induction activities may be worth considering. Questions regarding the pace of the course will be more carefully phrased in subsequent investigations with an aim to uncover any underlying reasons.

The course resources were designed with interaction in mind. Students were unanimous in highly rating the multimedia lectures, in particular the user controls enabling replay and revision. These combined PowerPoint slides with a voiceover and included a range of short video clips and animations demonstrating the salient points of animal behaviour. The accompanying transcripts were considered excellent tools for learning enhancement. *'They were very well written, interesting and definitely more useful once we were able to download the notes to accompany the lectures.'*

'I found them very effective, the voiceover helped.'

'I really enjoyed the tutorials, i followed them with my printouts and scribbled my own notes as i went.'

'Most effective - once I downloaded the Powerpoint handouts and transcripts - I'm old-fashioned and prefer to read, make notes and then listen and add.'

It is worth noting that the tutorials were originally converted using Adobe Flash and Shockwave software which required the buying in of technical expertise with associated costs. The recent availability of screen capture software means that similar multi-media lectures can be re-created more cheaply or, using open source screen capture, at no cost at all. As well as the multimedia tutorials, interaction was provided from a series of formative assessment activities. These assessments were created to engage students with content, and encourage self-assessment of knowledge levels throughout the course. Activities were rated by all students as 'Very Useful'. Comments included:

'Well designed to build up knowledge.'

'Very helpful and many more could be included in the future.'

'They were a quick and entertaining way of learning.'

'I enjoyed the multiple choice questions on this week's activity.'

'Useful and clarified my understanding.'

Interaction through the asynchronous discussion groups was high but less so in the synchronous tutorials. The main barrier was reported as difficulty in finding a mutually convenient time. Online tutorials were offered 6.00 - 7.00 p.m. on a

Thursday evening. 50% of students expressed a preference for weekday evenings but comments indicated the majority of students had a typical working pattern which precluded regularity.

'It is difficult to say due to variation of shift patterns.'

'its hard to set a time when your rota is variable'

Comments from students demonstrated the retrospective value of real-time communication with tutors. This suggests that even when students are unable to participate, the tutorial practice has benefits which make it worth continuing.

'...it is not the fault of the tutors that i didnt partake however reading the postings after the event was usefull, i only wish i could have been more actively involved i can see the usefulness of them in the future.'

'even though I could not go online live it was useful to look at them later to see peoples comments.'

'I did enjoy participating especially as I could not take part in the tutorial discussions. I especially enjoyed receiving replies and comments from [tutors]'

While activity in the tutorial discussion groups was high, the social café forums were largely ignored. It was anticipated that students would welcome an opportunity to interact on a social level and the extent to which students ignored social communication was unexpected. When asked about the importance of getting to know fellow students outside of their work identities the typical response was *'I don't feel it was necessary.'*

A Gallery area was provided and students asked to provide images to represent themselves online. Questions about non-contribution revealed a similar lack of interest. *'It was nice to see but I don't really feel it was that beneficial.'*

'I looked at the gallery once at the beginning of the course but it didn't make much difference to me personally.'

'didnt have time to use'

'It would be better if photos had to be posted as part of registration or else you do not bother and the 'opt out' mentality begins.'

Students were asked if they missed the opportunity to meet up for an induction day; the majority of other distance delivery courses at the university encourage a face-to-face induction session. However, this was not seen as being detrimental to the learning experience.

'Maybe if it was a longer course but not sure it would make a huge difference.'

'It was the fact that I didn't need to do campus inductions and getting to know other students that this course appealed to me.'

Students demonstrated reluctance to engage in the Gallery or other invitations to share communication on non-work related issues. In contrast, the most effective learning clearly derived from the sharing of practice-based knowledge and experience within the tutorial discussions. Lave & Wenger (1991) suggest a series of activities to stimulate the development of a community of practice. Analysis of the discussion forums identified spontaneous examples of this process where shared practice was the main stimulus for interaction. While it was anticipated that this would be a key feature of the learning, the degree to which students focused purely on work related issues and showed little interest in socialising was a less expected finding. Table 1 shows how evidence from the transcripts supports the development of a community of practice.

Conclusion

Pheromone Therapy presented a unique opportunity to design, construct and evaluate an online course. Three proposals were identified as being key to the effective delivery of online distance learning; these were Induction into the technology and the experience of online learning; Interaction with colleagues and content and opportunities for building social relationships. The research into the student experience indicated that Induction and Interaction were highly valued but that the student focus was exclusively on situated learning. Social invitations were mostly ignored and communication notably restricted to the sharing of practice. Students may have less interest in 'getting to know' each other socially than received wisdom leads us to believe. It will need to be established if this was a feature unique to this group or pertinent to all practice-based learning. It could be suggested that there needs to be a focus on putting the learning back into e-learning if digital delivery is to continue to be used to assist widening participation in higher education and offer effective online learning experiences.

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Figure 1 '3PD' design model used in Pheromone Therapy

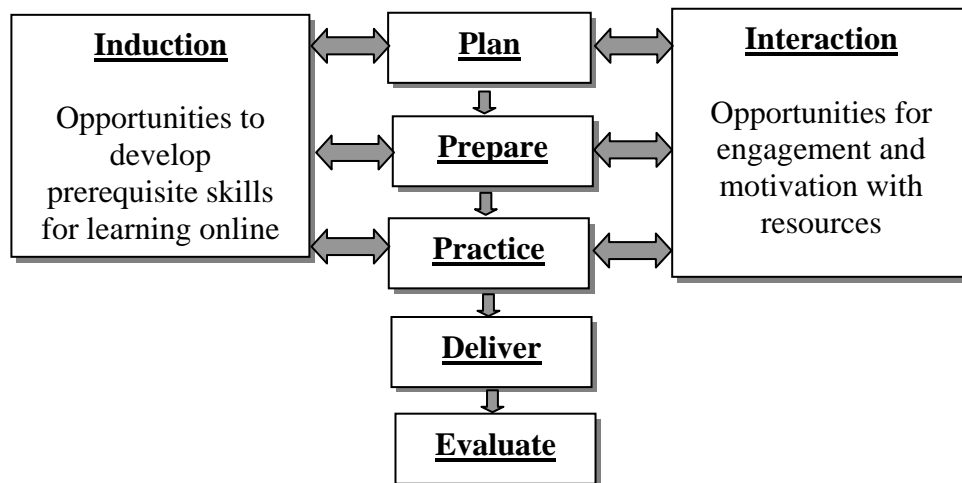


Table 1 Evidence from transcripts supporting the development of a community of practice

| Activities | Evidence from transcripts |
|---|--|
| Problem solving | I was wondering what advice would you give to an owner who has adult cats and wants to introduce a dog to the household |
| Requests for information | I've been reading the 'Truth about Dogs' by Stephen Budiansky...does this suggest that some associated stress behaviours cannot be avoided? |
| Seeking experience | I know this wasn't one of the discussion group questions but I would like to ask how many people do home visit behavioural consultations rather than the client coming to the clinic |
| Reusing assets | I listened last night to a lecture on the hospitalised cat – evaluating the stress. I will put some of the point on another thread |
| Coordination and synergy | I have some of these lectures on cd rom and will try to circulate them; hope to get something organised next week. |
| Discussing developments | Does anyone use any other assessments that I can't think of here? |
| Documentation projects | Here's the link. I hope it will work. If it doesn't I can send anyone who is interested the pdf file. |
| Mapping knowledge and identifying gaps | I've never done kitten socialisation classes but would be intrigues to see one. It would be interesting to find out if people think kitten parties would help |