

PHEROMONE THERAPY: DESIGN FOR LEARNING ONLINE

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Abstract

Learning online presents challenges for tutors and students alike and retention is poor. The Pheromone Therapy online course was designed to include opportunities for induction, interaction and social communication. The social aspects of learning online are often seen as prime motivators in building effective learning experiences. Interviews with students, primarily mature workers in veterinary surgeries, while revealing support for induction and interactivity, suggested that learning experiences which were situated in practice, with opportunities for shared participation, created the greatest cohesion and sense of community.

Introduction

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 but with no formal or independent qualification for those seeking a wider knowledge of such treatments. In response to the increasing interest among veterinary professionals, the author was invited to design a course, Pheromone Therapy, to fill this gap. This paper will look at the theoretical and the practical elements considered essential for effective online learning design and report on findings from the author's investigation into the experience of the first cohort of students on the course.

Distance Delivery

Early distinctions between “digital natives” and “digital immigrants” have evolved into debates about levels of digital literacy. The digital divide is now less about access to technology but more about the ways in which it is used (Prenksy, 2001; CIBER, 2008). Distance online delivery involves a dual learning curve. When the prime delivery mechanism is a virtual learning environment it should be expected that the student cohort is likely to present a mix of prior digital experience.

Innovation theory (Rogers, 1995) recognises that identified need is a prime motivator for change in practice; for students this motivation may be a return to academic study. The majority of distance delivery involves at least some, if not all, online components, so students selecting flexible models of education may face a technical as well as a pedagogic challenge and designers of online courses need to

recognise the dual nature of this challenge. Students uncomfortable with virtual environments are less likely to become successful online learners than those familiar with engaging with a range of digital content. Ensuring time and opportunities are built in for students to find their digital feet, as well as their academic ones, may be a key to online learning design.

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, it was felt that a typical virtual learning system could provide the balanced mix required.

Underpinning Theory

The technical processes of online delivery must reflect, and be informed by, appropriate pedagogical approaches. Accounts of online learning experiences have been criticised for failing to draw upon theoretical positions and following commonsense rather than theoretically informed design (Conole et al., 2004). Underpinning practice with theory is essential if desired outcomes are to be effectively mapped against the most appropriate tools and activities.

Design for effective online learning requires a creative approach to rational issues such as curriculum alignment and assessment. When designing the Pheromone Therapy course it was felt important to move away from a content driven style that replicated the transmission model of face-to-face delivery. Rather than text-based resources, a more interactive environment was sought — one which supported a constructivist approach where students could engage in meaningful learning experiences. Application of the principles of curriculum alignment to virtual learning environments emphasises a need to develop appropriate activities which are relevant to the learning outcomes, but which also give the student opportunity to test their knowledge acquisition in a formative and engaging manner.

The affordance of the Internet for collaboration, and the nature of resource-based, independent learning assume the student is both self-directed and motivated. Yet these qualities are often outcomes of higher education and not necessarily present from the start. Students new to learning online may need encouragement and

support with the processes of engaging with virtual communication. Appropriate scaffolding can provide support when required and be withdrawn as the student gains in confidence. Such scaffolding exploits the Zone of Proximal Development (ZPD) defined by Vygotsky (1978) as the distance between the learner's current and potential cognitive development. Support from staff or peers, who already have the prerequisite skills, alongside opportunities to practise new skills, create a framework of peer, social and task 'presences' identified as essential components of effective online practice (Garrison & Anderson, 2003).

Translating face-to-face support and social interaction into a virtual environment can take time and models for establishing an online community suggest phased activities that encourage sharing of information (Salmon, 2000). A process of assimilation into a new online environment may be necessary to reduce feelings of isolation. Students who experience initial difficulty with text communication have an opportunity to practise while also building relationships and getting to know their colleagues socially. Research on Computer Mediated Conferencing (CMC) suggests that giving students time to establish relationships with colleagues helps build the foundations for future confidence in online contributions (Preece, 2000). Once the teaching elements of the course have begun, social interaction should then be directed towards areas with a specific societal focus.

Pheromone Therapy was underpinned by a network of opportunities for social interaction. Activities designed to establish social presence included a 'café' discussion forum and a gallery for student photographs. The weekly lectures were supported with individual online tutorials. These offered opportunities to apply learning to practice and enabled meaningful engagement with content. The process of collaborative learning through shared activity was seen as encouraging student learning to be situated within their lived experiences and help develop a network of social, peer and task relationships described by Wenger (1998) as a Community of Practice.

Design for Online Learning

Distance delivery can pose a significant paradigm shift from traditional transmission modes. Didactic pedagogies, where students are passive recipients of knowledge, become less appropriate. Emphasis shifts from delivery to support; from the lecturer being the 'fount of knowledge' to the facilitator of the student learning experience. Effective learning experiences require more than digitised lecture notes and handouts and if maximum advantage is to be gained from online communication opportunities, synchronous and asynchronous discussion needs to be planned, monitored and moderated. Rather than having a single person in a lecture theatre, design for online learning requires a multi-team approach.

Lecturers retain their importance but the team involves learning developers and learning technologists with the appropriate academic subject librarians and administrative support staff. It can be a complex undertaking and the time required to set up an online course is often seriously underestimated. Unlike face-to-face delivery, virtual learning areas offer valuable opportunities for pre-course testing therefore involving additional roles of critical friends and colleagues.

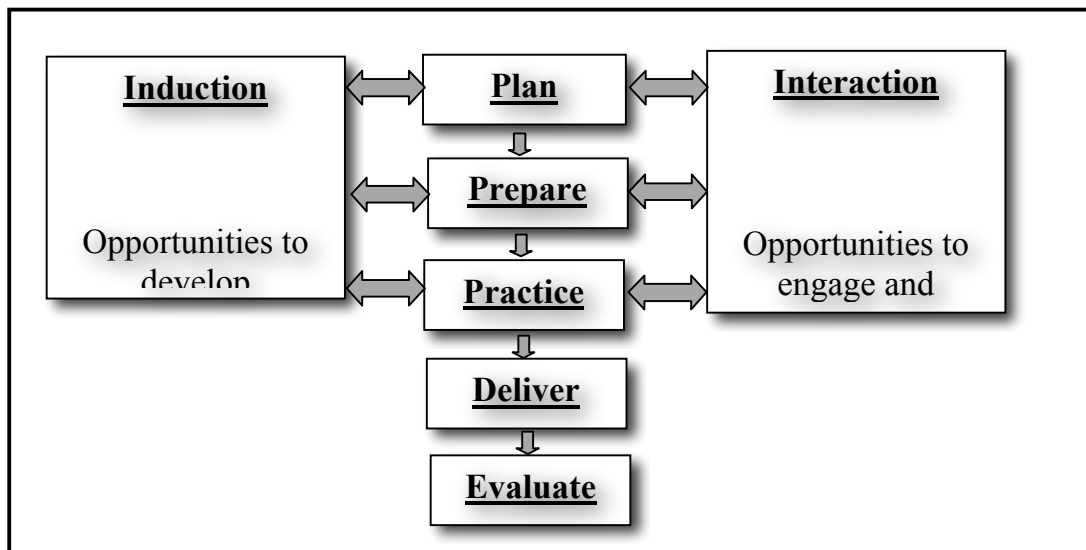
The practice of creating a digital course, within an appropriate theoretical framework, can be best enabled through a model of instructional design where the essential processes are identified and given structure. Part of this process involves creating a framework of learning outcomes, appropriate activities and assessments, and then breaking these down into discrete, manageable chunks. This way, effective learning experiences can be constructed — ones that rely heavily on active user engagement with pedagogically informed content.

Instructional design identifies the key learning experiences, and staff allocation to tasks and responsibilities, within an overall time frame. The process offers a creative approach to rational issues such as curriculum alignment, and achievement of learning outcomes, but includes built in capacity for flexibility should the need arise.

Instructional Design

Traditional instructional design taxonomy has roots in the rudiments of face-to-face delivery and can be successfully applied to design for online learning. Traditional models (Fardouly, 1998) encompassed the key stages required but failed to acknowledge the disproportionate investment of time and resources the learning design entails. The author adapted existing models to create one which more accurately reflected the process and is shown in Figure 1.

Figure 1: The 3PD Design Model Used in the Pheromone Therapy Course



The core of the model consists of the **Plan**, **Prepare** and **Practice** stages followed by **Delivery** and **Evaluation**. Two key processes of **Induction** and **Interaction** were then incorporated into the first three stages. Induction included activities focused on preparation for learning and the establishing of 'social' presence and communications. Interaction involved the design and construction of activities designed to enable the 'cognitive' and 'teaching' presences identified by Garrison and Anderson (2003) as prerequisites for optimum online learning conditions.

Induction. As already referred to, learning online poses a dual technical and pedagogical challenge, especially if the student's existing experience is limited to a traditional transmission model. Pheromone Therapy used the Induction phase to create a pre-course space for dealing with technical problems without them impacting on progress in the early weeks of the course. This was also seen as the time to begin to build the social connections which were seen as integral to an effective online community.

The process of building online social links began with a request for students to introduce themselves and establish common links and points of interest. Further exchange of social information took place through an online photo gallery which was also an opportunity to check skills with uploading and attaching files. Extending this early collaboration, students were asked to engage with Net-etiquette and work together to construct their own preferred guidelines for communicating online. At the end of the Induction phase, students were asked to compare themselves with how they felt at the beginning thereby introducing the concepts of reflective practice that underpin the learning experience.

Induction began the process of building a social community at an early stage in the educational journey, before teaching started. Opportunities for social exchange were seen as important for building confidence and establishing the skills necessary to operate successfully within a virtual learning environment. Ensuring a 'social' presence, and giving the cohort a sense of itself as a cohesive social group, was seen as an essential component in building and maintaining a learning community. Most importantly, recognising the poor retention rates with distance delivery (Ormond, 2003), induction is a process that can make students feel valued and welcomed; a good experience at the start of the course may improve the chances of completion.

Interaction. Discursive interaction is key to the construction of meaning and knowledge in virtual learning environments. To maximise this potential, each Pheromone Therapy tutorial had an associated discussion area with pertinent questions and a weekly synchronous tutor-led session. Interaction in forums can produce powerful learning experiences, but resource materials that support and enable interaction are also recognised as having valuable learning potential.

Repurposing existing face-to-face content into small activity-based learning objects and chunks including active involvement with content offered rich stimulation. The challenge for the author was to minimise the technical knowledge required to construct these activities so that the focus was on pedagogic content. Following the principle that interaction encourages engagement, pheromone lectures were recreated as audio-visual tutorials that included narration, animation and video set in a user controlled environment. Each tutorial was supported by supplementary activities with formative and summative assessment opportunities. Supporting individual recall and revision, these check points for learning were produced using design templates which could be customized in terms of appearance and content with options for individual question feedback.

Principles of inclusive design were adhered to throughout construction of the learning area and all multimedia content was accompanied by appropriate transcript materials. Inter-activities were provided in a variety of formats including a textual alternative and an extensive pre-course evaluation 'tested' the interactive content with a variety of users and assistive technologies.

Research

The decision to research the student experience of the first delivery of Pheromone Therapy was seen as an opportunity to investigate what JISC (2007) described as being the 'under researched world' of the learner in a digital age. It allowed the author to assess in more detail the effectiveness of the learning design and draw attention to identified course strengths and weaknesses. The author conducted an initial evaluation via an online survey. A researcher was then employed to contact the students, all professional workers within veterinary practice, and identify those willing to participate in the research study.

Methodology

The study is based on a transcendental phenomenological approach to social research, first developed by Husserl (1963) and further advanced by Schutz (1962), which allows an examination of how respondents construct intentional conscious structures and attach and share the meaning of phenomenon (ibid). The rationale for this approach is to examine the students' constructs of intentional structures from interaction with the VLE and with each other. Although this approach does not provide 'hard data' with regards to identifying correlations between particular variables (in fact, it implicitly contests both the validity and reliability of the more objectivistic epistemological approaches to social research (Schutz, 1962)), it does allow the research to examine the student experience of online learning, which at times presents contrasting and competing constructions of this experience. Although the findings are based on the experience of a small

sample, which of course raises the issue of generalisability, Guba and Lincoln (1994) state that research of this nature is valid in its own right and that the findings are transferable to similar situations. Thus, the research is able to suggest conclusions and recommendations which can be made in terms of developing VLEs and providing an online learning experience that is inclusive and pedagogically effective.

The research was administered using asynchronous email interviews with the 2007/08 student cohort. The rationale for this approach was grounded in the phenomenological approach, the impracticality of interviewing students in person due to the geographical dispersion of the respondents, which is quite common with online learning cohorts, as well as the difficulties of arranging telephone interviews with respondents who were all fully engaged with demanding full time careers. Due to these constraints it was decided the most practical approach to data collection would be asynchronous email interviews. 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). These included the difficulty 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, a small number of respondents did not fully complete all aspects of the interview, which led to minor gaps in the data. Despite these 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 an in-depth examination of how different and competing conscious constructs are created and represented through language. While there a number of approaches to discourse analysis, 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, and thus is an entirely logical form of analysis for a phenomenological methodological approach based on the conscious constructs of respondents. This analytical approach is significant in the fact that it allowed the research to explore the constructs of the students' experiences of the VLE and online learning in general. 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), and thus is appropriate for an online platform that is heavily, if not solely, reliant on the electronically written communication.

Research Findings

The induction phase of Pheromone Therapy, designed to ensure students had the necessary technical skills to be effective 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. Examination of technical support help desk records suggest that there were initial difficulties with logging on and unfamiliarity with the digital environment did take some students time to become accustomed to.

“I would have appreciated receiving the induction materials earlier than I did.”

“I recommend that you get the materials out at least a month before the start so all kinds of glitches can be sorted.”

The initial programme evaluation showed that the number of students who rated their computer skills as “not confident” at the start of the course (41.2%) had significantly fallen (6.3%) by the end of the course.

When asked to comment on their increased confidence with using the technology, students typically reported positive benefits from participating on the course:

“[I now feel] more confident with future online learning programmes since participating in this one”

These comments emphasised the importance of not underestimating the value of pre-course preparation and also not taking for granted that students automatically have the appropriate digital competences.

Overall, the students were unanimous that the course had been a beneficial learning experience; they valued the specialist nature of the content but found the pace too fast, with many suggesting fortnightly rather than weekly tutorials. There may need to be a greater spread of the workload in future courses, or this could have been a reflection on the students’ pre-existing level of digital skills which meant they took longer to access, absorb and respond to the new knowledge. The question will be more carefully phrased in subsequent investigations.

Students were unanimous in highly rating the Pheromone Therapy lectures. In particular the user controls enabling replay and revision, and the provision of transcripts to all students were seen as excellent tools for enhancing learning.

The interactive assessments designed to engage students with content and assess levels of knowledge throughout the course were rated by all students as “Very Useful.” Comments on the Interactive assessments included:

“Well designed to build up knowledge.”

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

“I enjoyed the multiple choice questions on this week’s activity.”

“They were a quick and entertaining way of learning.”

“Useful and clarified my understanding.”

The discussion forums attached to each tutorial were also highly valued. One interesting outcome was the extent to which the tutorial discussion forums were the main focus of learning experiences while the social café forums were largely ignored.

This paper has already suggested that the processes of shared activity encourages student learning to be situated within lived experience. This combination of social, peer and task relationships, creates opportunities for effective learning derived from sharing practice-based knowledge. Lave and Wenger (1991) suggest a series of activities to stimulate the development of a community of practice. Table 1 shows how discourse analysis of the discussion forums identified examples of this process.

Table 1: Evidence for Development of a Community of Practice

Activities suggested by Lave and Wenger (1991) as integral to communities of practice.	Discourse analysis from discussion forums
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 intrigued to see one. It would be interesting to find out if people think kitten parties would help.”

While students were avid contributors to the Tutorial based discussion forums, they were less interested in opportunities for social communication. The Café type forums were only partially visited initially and eventually fell into disuse.

When asked about how students saw the importance of getting to know the others in their cohort the typical response was

“I don’t feel it was necessary”

Reasons given for not contributing to the Gallery were in a similar vein.

“It was nice to see but I don’t really feel it was that beneficial.”

“It didn’t make much difference to me personally.”

Students were also asked if they missed an 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 but this was not seen as detrimental.

“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”

With this cohort of students, the identified needs for an induction period, interaction with content and the provision of opportunities for the social side of learning were only borne out in the first two instances. Both induction and interaction were appreciated but with regard to societal contact, the student focus was clearly on practice-based communication.

Conclusion

Pheromone Therapy presented the author with a unique opportunity to design and develop an online learning course. Innovative practice included pre-course Induction activities designed to give students the skills required for virtual learning and extensive use of multimedia and inter-active resources. Opportunities for socialisation were seen as key to building an effective online community but the research into the student experience indicated that societal attention was focused exclusively on situated learning. Encouragement to build social relationships was largely ignored and online communication was notably restricted to the application of new knowledge to practice and the sharing of that experience. There are clear implications for future course design, in particular in terms of providing an online experience that is inclusive and pedagogically effective: firstly, the expected confirmation that students need time to find their digital confidence prior to starting their course and secondly the student appreciation of high levels of interaction and formative assessment. This cohort of students expressed little interest in getting to know each other socially. It needs to be established if this was a finding unique to this group or an identifiable feature of all similar practice-based learning and attention will be paid to this in evaluation of future cohorts.

References

- Bryman, A. (2004). *Social research methods*. Oxford: Oxford University Press.
- CIBER. (2008). *Information behaviour of the student of the future*. A CIBER Briefing Paper. Retrieved April 2, 2009, from <http://www.ucl.ac.uk>
- Conole, G., Dyke, M., Oliver, M., & Seale, J. (2004). Mapping pedagogy and tools for effective learning design. *Computers & Education*, 43, 17–33.
- Fardouly, N. (1998). Learner-centered teaching strategies. *Principles of instructional design*. Australia: The University of New South Wales.
- Garrison, D., & Anderson, T. (2003). *E-learning in the 21st Century: A framework for research and practice*. London: Routledge.
- Husserl, E. (1963). *Ideas: A general introduction to pure phenomenology*. (Trans. W. R. Boyce Gibson.) New York: Collier Books.
- JISC. (2007). *In their own words*. Retrieved April 2, 2009, from <http://www.jisc.ac.uk>
- Lave, J., & Wenger, E. (1991) *Situated learning: Legitimate peripheral participation*. Cambridge: Cambridge University Press.
- Potter, A. (1997). Discourse analysis as a way of analysing naturally occurring talk. In D. Silverman (Ed.), *Qualitative research: Theory, method and practice*. London: Sage.
- Preece, J. (2000). *Online communities: Supporting sociability and designing usability*. John Wiley: Chichester.

- Prensky, M. (2001). Digital natives, digital immigrants. *On the Horizon*, 9(5).
- Rogers, E. M. (1995). *Diffusion of innovations*. New York: Free Press.
- Salmon, G. (2000) *E-moderating: The key to teaching and learning online*. London: Taylor and Francis.
- Schutz, A. (1962). *Collected papers I: The problem of social reality*. The Hague: Martinus Nijof.
- Simpson, O. (2003). *Student retention in online, open and distance learning*. London: Kogan Page.
- Vygotsky, L. S. (1978). *Mind and society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.
- Wenger, E. (1998). *Communities of practice*. Cambridge: Cambridge University Press.