# The Use of Object-oriented Social Environments for Social Work

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*Abstract*— **This article documents the design and pilot delivery of a computer-mediated baby welfare practice course founded on constructivist instructional principles. It was created by Family Nurse Partnership (FNP)- part of the National Health Services (NHS) in UK in 2015. Offered to healthcare practitioners via the Internet using web-based tools and resources, the course expanded access to the baby welfare specialization option for nurses working for FNP. The article examines emerging teaching and learning options across major components of online course development and delivery. After providing a contextual background, constructivist instructional design theory is summarized, and a rationale for adopting this approach is discussed. This is followed by a brief report on the findings of the formative evaluation of the pilot delivery. Finally, the evolving underpinnings of online instruction are considered, including shifts in the roles of learners and instructors and the role of pedagogy in an evolving educational paradigm.**

*Keywords*— *constructivism; e-learning; online; pedagogy; technology; baby welfare; social work education.*

## I. INTRODUCTION

The Family Nurse Partnership is a voluntary home visiting programme for first time young mums, aged 19 or under (and dads). A specially trained family nurse visits the young mum regularly, from early in pregnancy until the child is two. The Family Nurse Partnership programme aims to enable young mums to:

- Have a healthy pregnancy
- Improve their child's health and development
- Plan their own futures and achieve their aspirations

The Family Nurse Partnership programme is underpinned by an internationally recognised robust evidence base, which shows it can improve health, social and educational outcomes in the short, medium and long term, while also providing cost benefits.

The relationship between family nurses and clients is central to the success of the Family Nurse Partnership programme. Working as a family nurse gives clinicians an opportunity to develop long-term therapeutic relationships and use the specific programme model and methods to enable young and vulnerable clients to make the positive changes and adaptations required for successful parenthood over a two and a half year period. Family nurses find the role stretching and challenging, but hugely rewarding, as shown in an independent family nurse workforce study.

Each local team is supported by an administrator, who is an important member of the FNP team and contributes to the outcomes of the programme. The administrator's skill in managing the office environment, quality checking the data, generating reports and supporting the team's administrative workload is vital. These components, incorporating the applicable criteria that follow.

## II. EPISTEMOLOGY, INSTRUCTIONAL DESIGN AND COMPUTER-MEDIATED LEARNING

The major premise of constructivist epistemology is that the reality is constructed by the learner based on his existing knowledge and experience or background rather than being an external absolute. Within this light, proponents of this theory state that for sense-making individuals ''assemble'' their own personalized versions of reality [8]. Regardless of our underpinning theoretical approaches we choose as scholars in our studies, this approach has certainly some implications in terms of instructional design. Within the context of constructivism, via means of ongoing reasoning and learning, reality is formed based on individual experiences, beliefs, and perspectives. So, there is no one single reality out there. As long as we continue learning, our knowing is also being shaped. Transformative learning is initiated by one's encounter of experiences which are emotionally charged and hence do not fit into our available mental schemes. So, this being evoid of meaning require the construction of new schemes.

Another scholar in this field, Von Glasersfeld (1995), asserts that rather than involving a stimulus-response process, learning entails a generative process that require a self-regulation and the building of mental structures through reflection and abstraction. In other words, learners relate new information to their existing knowledge schemes on an ongoing basis (Jonassen & Mayes, 1993), which at the end leads to the ''social construction'' of new personalized meaning. Due to this integrative aspect of prior knowledge base, constructivist instructional design approaches offer a more open-ended, learning experience.

Computer-mediated instructional design and its web-based interactive options promote environments that, we would argue, are more inherently constructivist in nature. As Harasim (1996) states in Computer Networking and Scholarly Communication in the Twenty-First-Century University, a transformed paradigm accentuates ''the focus from knowledge transmission to knowledge building''. According to this philosophical perspective, the course instructor should provide various opportunities for skill and knowledge acquisition via means of online interaction and meaning-making rather than only conveying knowledge. At the same time, the learner

should give efforts in order to become an ''expert'' in his own field by taking on more responsibility for their own learning rather than simply obtaining knowledge [1]. In fact, the rather overused one expression of shifting from ''the sage on the stage, to the guide on the side.'' describes this statement accurately [1].

### III. Applying Constructivist Principles To Web-Based Design

When the world wide web was born in 1994 with the introduction of Mosaic (later on to become Netscape Navigator) educational institutions started to shift their attention from classroom instruction to the development and delivery of online and ''blended'' courses. As the early adopters simply replicated lecture- style delivery models online, there was not a dramatic shift in the way that learning and teaching was done. Gradually, as more features were adopted by the learning management system (LMS) software learning environments also started to reflect the broader application of constructivist principles [1, 2].

As online learning includes high-quality interpersonal interaction [3,4,5], learners should be allowed to present and test their growing competence across broader audiences beyond going any place and time constraints. It can also provide an exposure to diverse opinions of several individuals in the real world beyond both their personal and professional communities [3].

The instructional design framework, presented in Table 1 below provides a ground for ways of negotiation of meaning and establishment of a common understanding [1]. It was adapted from the work of various prominent scholars in this field [1,2,3,4]. This framework has been selected because of its flexibility and potential to guide the development of the competency-based child welfare practice course within NHS. This table illustrates how key variables across five foundational areas, of course and program design have been used.

TABLE 1. A Constructivist Instructional Design Framework [1]

| Assumptions | Values | Instructional Design Principles | Instructional Strategies | Exemplars of a Constructivist Learning Environment |
|---|---|---|---|---|
| Individuals interpret and construct meaning based on their experiences and evolved beliefs | Collaboration | Emphasis on the *affective domain* of learner | Interactive | Embedding skills and knowledge in holistic and realistic contexts |
| | Personal autonomy | Instruction *personally relevant* to the learner | Experiential | Scaffolding and coaching of knowledge |
| | Generativity | Help learners develop skills, attitudes, and beliefs that support *self-regulation* of the learning process | Independent | Authentic learning tasks |
| | Reflectivity | Context offers balance and control of learning environment with promotion of personal autonomy | Direct and indirect strategies | Multiple perspective building, and multiple representations |
| | Active engagement | Embed reason for learning into the learning activity | | Collaborative learning activities |
| | Personal relevance | Strategically explore errors | | |
| | Pluralism | | | |

Learning management systems provide a ground for both synchronous (in real time/at the same time) and asynchronous (in delayed time or not at the same time) events. Another major advantage of web-based learning is being provided with the opportunity for self- paced learning and reflection, two central premises of constructivist epistemology. By drawing on these strengths of a web-based approach to online learning, constructivist principles can be integrated within the process of curriculum development via means of creative strategic approaches.

### IV. The Use Of Moodle As An E-Learning Platform

The learning management system (LMS) Moodle was selected as the e-learning platform. As Tavistock & Portman already had a license to use it, FNP- being a part of them, used the same license for the software. A new Moodle page has been customized for FNP.

Moodle entails not only a variety of course development and delivery features, but also communication tools such as online discussions; private and group e-mail; online ''chat'' that allows learners to send text back and forth in ''real time;'' streaming audio and video file transfers; online activity tools such as quizzes, short answer assignments, self-tests, surveys, and tools that might be supportive in terms of organizing course content and developing learner presentations using a web browser [1].

Nurses can not only interact with other learners, teachers, but also with professionals in communities far from their classrooms. The tools can also support learners in terms of establishing access to many different types of online resources which offer options for facilitating open dialogue, reflective discussions among their peers and guided discussions by their supervisors within small working groups or within larger class cohorts by use of a diverse range of learning and teaching strategies. When competently designed, these activities can be used to facilitate individual learners' social construction of meaning in new and different ways [1].

Online group discussions led by supervisors integrate the experiential bases of nurses with personal interest areas, providing high levels of motivation when combined with quizzes.

### A. The Instructional Design of A Competency-based Baby Welfare Practice Online Course

To begin with, a traditional instructional design template was used to break down the course into interrelated Moodle modules. Once the main knowledge domains were established by the course director, these competencies were reviewed and functionally integrated among the learning modules [1].

### B. Moodle Course Management and Communication Tools

The competency-based emphasis- in other words, those modules that require one to follow the necessary rules- of the baby welfare practice course, combined with the structural perspective of the Social Work program- in other words, those modules that require one to think out of the box, presented a significant challenge to the instructional design team. Following the principle that learners should progress at their own pace, while at the same time maintaining some degree of group cohesion, learners were provided with a time schedule of a few weeks until the start of the formal classroom training to

work through each separate learning module [1]. Given the different learning styles, background and work experiences, and approaches to completing required components, there was eventually a diverse range of ''routes to learning'' [1,2].

Each module emphasized a mastery of specific competencies based on a particular knowledge domain. The focus was as much on process as on arriving at the ''right'' answers, although correct answers were provided along with feedback on incorrect choices, in content areas where a right/wrong conclusion was required [1,2].

Preferred answers were given as feedback to the learners following their completion of online quizzes where there was more than one correct solution or where personal initiative to ''go another step'' could enhance their knowledge and skill acquisition in the competency area. The majority of participants were practitioners with previous experience in the field of nursing [1]. The constructivist approach enabled them to draw on the richness of that experience and develop a shared pool of knowledge and skill as they completed exercises and assignments with others in their learning community. Learners were required to work through a variety of online activities with the support of their supervisors. The activities were accessed and supported by a range of Moodle tools illustrated in Fig. 1 [1].
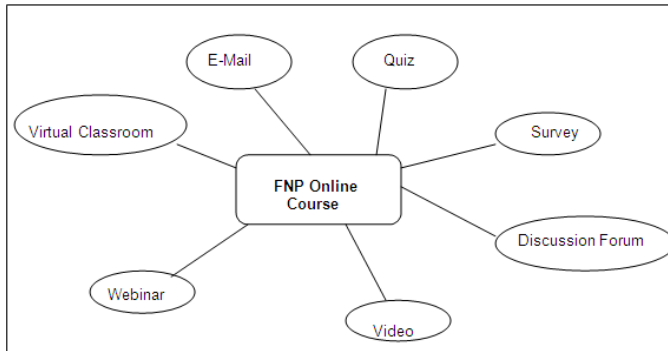


Fig. 1. Moodle Course Management and Communication Tools (Adopted from [1]).

### C. Instructional Format

Each learning module followed the same instructional sequence, shown in Fig. 2, to make it easier for learners to navigate through the course content and develop confidence with the online learning process [1]. Due to the large number of learners classroom trainings were provided in cohorts called as 'wave' depending on the particular location of the learners across England.

| Table of Contents: Foundations: FNP Theories and Methods (Wave 8c) |
| --- |
| Introduction |
| Chapter 1- History, Evidence, Theories |
| Chapter 1- Regional Discussion Forums |
| Chapter 2- Collecting and Using Data |
| Chapter 2- Regional Discussion Forums |
| Chapter 3- Human Ecology Theory |
| Chapter 3- Regional Discussion Forums |
| Chapter 4- Attachment Theory |
| Chapter 4- Regional Discussion Forums |
| Chapter 5- Social Cognitive Theory and Self-Efficacy |
| Chapter 5- Regional Discussion Forums |
| Chapter 6- Structure of the Visit and FNP Visit Guidelines |
| Chapter 6- Regional Discussion Forums |
| Chapter 7- Therapeutic Relationships |
| Chapter 7- Regional Discussion Forums |
| Chapter 8- Communication Skills in FNP: Models and Methods |
| Chapter 8- Regional Discussion Forums |
| Chapter 9- Maternal Role |
| Chapter 9- Regional Discussion Forums |
| Chapter 10- Use of Supervision and Reflection in Practice in FNP |
| Chapter 11- Regional Discussion Forums |
| Course Announcements |

Fig. 2. Standard Structure of Learning Modules.

### D. Course Home Page

The icons illustrated on the course home page in Fig. 3 and Fig. 4 provided easy and immediate access to the organizing components of the online classroom which can be either activities or resources. These included course modules, a course outline, communication and management tools, learner grade profile, selected resource materials, and a self-help guide. Learners were shown how to use multiple screens on their desktop by ''toggling'' back and forth from one set of features to another to increase the ease of moving from one tool to the next.
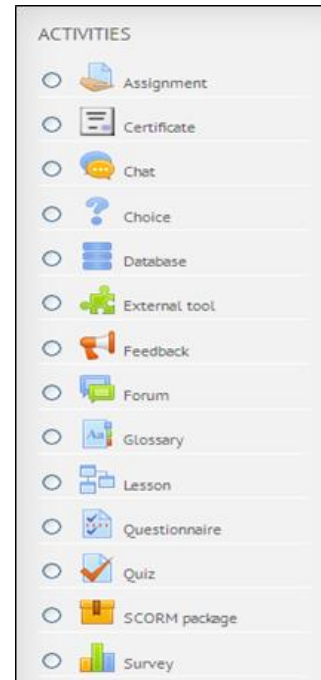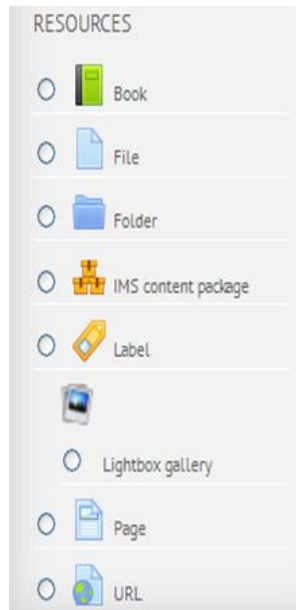


Fig. 3. Activities.

Fig. 4. Resources.

### E. Instructional Strategies

The learning activities in web-based environments play a fundamental role in determining learning outcomes. They determine how the learners will engage with the course materials and the kinds of knowledge construction that will take place [5,6,7,8]. In this course design, a mix of constructivist and traditional (objectivist) instructional strategies were integrated. This blending of strategies and approaches allowed the course instructor to maintain a flexible but critical learning stance while teaching to the specific baby welfare practice competencies [1,3,4].

The concept of ''scaffolding'' is introduced visually in Fig. 5. Scaffolding enables the instructor to draw to a greater extent on individual experiential knowledge base and the willingness of learners to initiate more independently as their growing knowledge and skills bases expand. As their confidence and competence in using Moodle tools and methods grew, instructor options expanded in the online learning environment. Learners were able to use the knowledge and skills acquired in previous modules to ''push the envelope'' and try more advanced features in subsequent sections of the course.
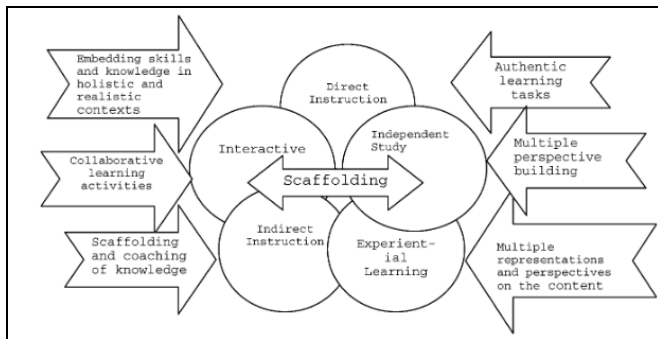


Fig. 5. Mixed Online Instructional Design Framework (Bellefeuille, G., Martin, R. R., Buck M. P., 2005)

### F. Scaffolding

The notion of scaffolding is described as an instructional technique wherein the instructor models the activity in detailed steps, then gradually shifts the responsibility to complete the task onto the learner [9, 10, 11]. In the contexts of computer-supported teaching and learning, however, the notion of scaffolding needs to be adjusted. This is particularly important because the World Wide Web offers new ways for learners to interact with and within the environment. Learner postings in discussion areas from previous weeks can be revisited, edited, or added to in subsequent weeks. This ''written record'' of the course progression and learner interaction is not available in the lecture-based face-to-face environment. The incremental building block approach that it affords is a key strength of the well-designed online course offering [1, 7, 8].

Another is the capacity to change directions in midstream via URLs to relevant websites or immediate downloads of a new piece of policy or legislation, if a particularly salient point opens the path to critical learning in another important area. In the fourth week of a course, when a discussion group comes upon a key point that can be foreshadowed as an upcoming important content area, participants in synchronous discussions can be taken immediately to the relevant resources and discussion outlines while the points are still fresh and the conceptual links established to reinforce the connection between the two areas. This shifting context allows innovative forms of learner supports depending on learners' knowledge and skill bases and instructor availability. In the online environment, the challenge is to replicate the quality learning aspects of verbal communication between an instructor and a group of learners in a face-to-face classroom and recreate the value of those activities in a virtual classroom setting.

Constructivist principles posit that knowledge is constructed by a learner rather than taught to the learner. The process of knowledge construction is viewed as deeper than the traditional approach (e.g. the learner is more actively engaged in solving meaningful problems). This transition lends itself to a more learner-centered approach to attaining learning outcomes. Content review, conceptual debate in online dialogue venues, and summarization of key learning points by the facilitator lend themselves well to the activity of scaffolding. The orientation module illustrated in Fig. 6 was constructed for this purpose wherein learners were introduced to the various components of the course and guided through a series of activities to gain confidence in the online instructional process.
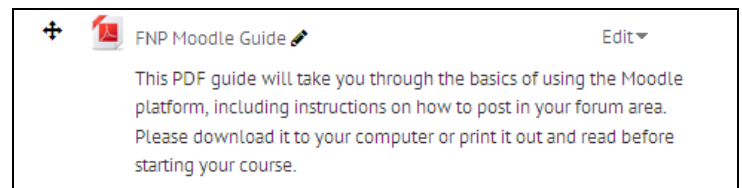


Fig. 6. Course Orientation Manual.

## G. Direct Instruction Strategy

Direct instruction was used to provide guided readings in advance of interactive group learning activities. It also was used to promote the acquisition of knowledge and practice skills through repetitive activities (e.g., completion of small tasks to build familiarity with legislation, multiple choice definition quizzes, and word puzzles) [1]. See Fig. 7 for an example.
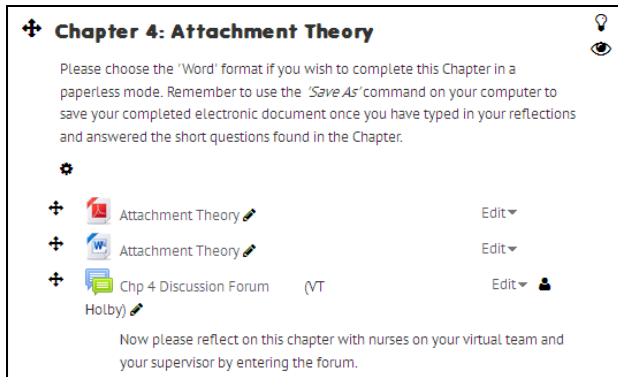


Fig. 7.   Sample Course Module.

## H. Indirect Instruction Strategy

In contrast to direct instruction, indirect instruction is mainly learner-centered and seeks a high level of learner involvement in examining, exploring, drawing inferences from data, or forming hypotheses. It takes advantage of learners' personal interest, life experiences, and natural curiosity by encouraging them to generate alternative solutions. Within this approach the role of the instructor is one of facilitator, supporter, coach, and resource person [8]. Some authors [9, 10] elaborate on instructional design implications for using such strategies.

Moodle discussion board area was used to encourage learners to think and talk about what they have observed, heard, or read. In discussion forums called as 'Reflective Discussion Forum' learners were asked to post their own thoughts with regard to each related chapter subject: ''Now please reflect on this chapter with nurses on your virtual team and your supervisor by entering the forum.''

'This is an inferential open-ended statement to which there is no correct answer [1]. It required learners to make inferences and encouraged critical and reflective thinking about their own understanding of the topic.

## I. Experiential Learning

Experiential learning is inductive, learner-centered, activity-oriented, and promotes concept attainment through experiential practice [1]. Instructional scenarios (e.g., case studies) that drew on participants' former work experiences and associated problem-solving skills were frequently used to promote the use of critical and evaluative thinking. The ambiguous or open-ended nature of the case studies encourages learners to contemplate multiple perspectives in light of the different stakeholders in the situation. The case studies were based on familiar, real-life scenarios in the context of England.

Learners were encouraged to share current work experiences and problem-solving strategies in their explorations of the case studies [1]. For example in course modules, learners were asked to engage in several online discussion forums concerning the following topics:

- • To reduce smoking in pregnancy
- • To initiate breast-feeding at a high rate
- • To cope better with pregnancy, labour and parenthood
- • To report increased confidence and aspirations for future
- • To return to education and take up paid employment
- • To report high levels of warm parenting and increased confidence in their parenting ability.

## J. Independent Study

Independent study refers to a set of guided instructional strategies provided to foster the development of individual learner initiative, self-reliance, and self-improvement. Each module contains a number of short answer assignment questions. Learners were required to research the content area by navigating a series of pre-assigned hypertext links.

They could choose to work independently, in pairs or groups, by seeking input into their ideas through the discussion boards.

## K. Interactive Instruction

Interactive instruction allows for a range of groupings and interactive methods. One such strategy for FNP is the use of debates for formal classroom training [1]. Debates require learners to engage in research, encourage the development of listening and oratory skills, create an environment where learners must think critically, and provide a method for trainers to assess the quality of learning of the learners. Debates also provide an opportunity for peer involvement in course evaluation. Throughout the course learners have been encouraged to debate issues from both practical and theoretical orientations within the context of their classroom training and reflective discussion forums.

## L. Grading

In keeping with the instructional design model, it is planned to apply a mixed grading approach. As at the moment, the use of Moodle by nurses is not at the desired level, there is no grading criteria in place, yet in the near future it is planned to distribute it to assess all aspects of participation, critical thinking skills, and the ability to provide correct answers. At the moment quizzes and multiple discussion forums are only evaluated at the level of participation.

## M. Significance of Formative Evaluation

The purpose of the formative evaluation was to assess the effectiveness of the computer-mediated learning process in facilitating learners, meeting the requisite course objectives, and acquiring related baby welfare competencies. The specific objectives of the study were to (a) evaluate the perceived experience of the learners, and (b) identify which online activities and instructional strategies within and across modules were considered effective in meeting the learning needs of the

learners. Information was collected online through a quantitative survey undertaken by a separate research group. Besides, informal discussions throughout the classroom training sessions were held by the Moodle team to probe into qualitative aspects of the learners' online learning experience and solicit feedback regarding the usefulness of the course in meeting their learning needs [1].

## V. Conclusion

When it comes to social work, simple and cost-effective e-learning platforms such as Moodle can provide various opportunities for learners ''converse'' with each other and the instructor as they do in conventional classrooms, but they also interact via the structure of the course design with a host of other resources independent of time and place constraints with immediate access to global net links, learning object repositories and digital libraries, and respected experts in the field [1].

The web-based distributed learning environment offers a unique and enhanced set of options for constructivist instructional design, taking advantage of human and technology-enhanced content delivery formats and learning interactions.

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