Appendix 1: Trial Patterns

The process of writing the first pattern started with a narrowing down process. This involved examining the peer-reviewed research to determine a set of possible topics for the study. This list was the result.

A01. Pattern List

- Portal – organisation
- Domain – which approach is best for your learning domain?
- Personalisation – How to personalise student’s coursework
- Which Environment/interface/system to use?
- What sort of activity to create? Interactive/3D/2D? (links to domain)
- Chat – to use or not to use? (Is in system chat better?)
- Bulletin boards – (link to role of tutor)
- How can students communicate between themselves? E-mail (link to role of tutor)
- 3D collaborative spaces / whiteboards
- How to integrate bespoke components and external games into the application (Learning Wrappers)
- What sort of bespoke application should I use? (decision tree/click and explore/sort/timeline/sim)
- Synchronous/Asynchronous which suits your course (links to domain)
- Role of tutor
- Quests within 3D environments (how to stop students getting lost)
- Re-usability of resources (see 3176555.pdf and SCORM)
- Progress tracking
- Marking
- Students don’t know where to go next – hints within application
- Debriefing – feedback to students on their performance
- Gallery Spaces – display and links to student’s work
- 3d Classrooms – how to meet online at the same time and conduct a class
- Game
Appendix 1: Trial Patterns

A02. Pattern One:

The Role of the Tutor

Figure A01-1 The tutor’s role now is to present a virtual presence. What is their role as a support to learning and the online materials?

*Background

As learning materials are now being presented online, the burden of ‘teaching’ has been lifted from the tutor’s shoulders. Learning is instead student-centred, becoming the student’s responsibility. But the role of tutor has not been relegated to history, it has evolved. This pattern describes the redefined role of the tutor in the online environment.

This pattern is used as part of the LEARNING PORTAL, ONLINE COURSE and FORUM patterns and presents ways to manage tutorial support as part of an online course structure.

***

* PROBLEM

If students are to create their own learning experience where the learner is in charge of their own learning experience through collaboration and co-operation, real world tasks and reflective practice – what is the role of the tutor?

Constructivist approaches to learning advocate an open-ended learning environment, where the learner is actively involved in the learning process through collaboration and co-operation with other students (Frizell, 2003a, 2003b). Learners construct
their own meaning rather than knowledge being transmitted by tutors. Constructivism focuses on the learner’s multiple representation of reality and how their environment determines the meaning of reality. This promotes an open-ended learning experience where the focus is on real world tasks and this enables reflective practice. (Kays, 2003) If the community of students collaborate and construct their own learning process, what then is the role of the tutor?

*Solution*

Every student should have a mentor, someone to provide scaffolding as they work their way through the learning materials and to help them when they have questions and problems. The mentor should answer questions, provide help, direction and encouragement in what can be an isolated way of learning. The tutor has to become a participant in the learning process, being prepared to devolve power to the students so that they are able to construct their own learning experience, to meet their personal needs from the online course. The methodology the tutor decides to employ is very much determined by the structure of the course, the learning environment, the needs of the students and the technology available.

1. *Tutor as active participant*

   Reassess your role within the learning environment and collaborate with learners, devolving power and decision making to students and allowing them to define the parameters of their own learning.

   In a Masters of E-Learning based at the University of Sheffield in the United Kingdom, two different approaches have been taken in redefining the tutor as active participant in the learning process; the first using collaborative e-learning, the second using co-operative e-learning.

   In the collaborative e-learning course, the students are divided up into small groups where they define a problem that is relevant to their field and that lends itself to collaborative work. The problem-based learning is undertaken using an action research mode of learning. This mode allows participants ‘to make choices about the management, focus and direction of their learning’ (McConnell & Lally, 2002, p. 62). This allows them to experience the complexities of working collaboratively online, work on a project that can be added to their portfolio and later shared with other learners, and critically reflect on their learning, using a set of self-analysis tools which
Appendix 1: Trial Patterns

are then made available to other members of the learning set to form an ‘assessment’ of each participant’s self analysis.

In the co-operative e-learning course, students define a real-world problem which is addressed in their assignment, defined by the course participants with the tutor. This project is approached on the principle that it is self-managed learning and reflects professional practice, whilst allowing students to work co-operatively with other students. Students participate in collaborative (self/peer/tutor) review and assessment procedures where each participant brings a set of criteria which they would like members to use in making judgements about their assignment, in addition to the use of a set of criteria which are offered by the tutor’ (McConnell & Lally, 2002, p. 63).

The course designers have redefined the role of the tutor. Rather than being an authority figure, the tutor sits at the edge of the two communities, that of the University and of the course participants. The tutor accepts the role of tutor/participant – which necessarily involves the devolution of power to the students. Students help determine the focus of the design of learning events and assessment, which is collaborative between the learners, their peers and the tutor. The tutor is also a learner, who, although he or she brings experience to the course, has to genuinely participate in the learning community (McConnell & Lally, 2002).

In these courses assessment is seen as a critical learning process which forms part of the course content, and as such is undertaken by the participants as well as the tutor. The fellow students’ assessment is given equal status to that of the tutor.

2. Tutor as Quest Giver

In an immersive 3D learning environment, direct students in their learning so that the online experience becomes a purposeful one, and so that the students do not become lost or overly involved with the environment, to the detriment of learning. Prompt the students and give specific timeframes for tasks so that the online duration does not overwhelm the tutor’s resources.

In a 3D Virtual Learning Environment set up at Orchard Primary School in Singapore called Quest Atlantis that taught science to 10 and 11 year olds, the teacher played the role of an Atlantian Council Member, who assigned appropriate quests for the students. Once completed, the quest was submitted to fellow teachers posing as Council Members for review and feedback. The teacher guided the students by providing contextual clues and tips accessible whilst undertaking the quest. Scaffolding provided guidance in the form of prompts and alerts within the program and via the teacher in his representation as a virtual avatar.

However, the young students often became engaged with the environment itself, to the detriment of the learning. Their level of engagement in the environment was
measured on a seven-point scale, and never achieved higher than a three or four (Lim, Nonis, & Hedberg, 2006).

One explanation for this was that the research was conducted in a language which was not native to the users, and the students were not familiar with the Quest Atlantis software. These two factors alone could influence the level of engagement by the students. The level of engagement was established via a series of interviews with the students and by observing the participants engaging with the software, as well as documenting their assessment submissions.

In a synchronous 3D environment develop methodologies to direct the students’ learning such as giving the students a series of related quests that build on each other to form a complete learning experience, as well as providing virtual spaces and opportunities for the students to be able to ask questions of you and each other. In this way you can provide scaffolding, mentoring and direction to the learners. The students should be able to approach the tutor both publicly (interaction visible to all) as well as privately.

3. Tutor as Mentor

In a more traditional online learning space, where interactions between the students and the tutor are provided in 2D text-based bulletin boards (asynchronous) or chat rooms (synchronous), the tutor should lead discussions, answering questions or moderating a bulletin board so that students’ questions are answered and concerns raised. This pattern should be used in conjunction with the Eliciting Moderation pattern which provides guidance on how to promote discussion on bulletin boards. Private communications with students can occur either via email, online messaging or even via telephone support.

At the National College of School Leadership in Nottingham, United Kingdom, the online components of the coursework form part of a blended approach to learning. The students participate in a series of face-to-face workshops so that they can meet their cohort and tutor/mentor so that they can plan and personalise their learning. The remainder of the course is undertaken online, with communication with the tutor available via email or telephone and communication with the cohort of learners via an online bulletin board system called talk2learn. The talk2learn online discussion boards have had mixed success – discussions tend to become stale quickly and suffer from a lack of continuity and focus. The few areas of relative success is with the establishment of communities of like minded teachers, for example the small school community, where participants can share their common experiences.

The Open University in the United Kingdom also takes a similar approach, but delivers its blended learning coursework via online websites, printed material, audio and video resources via DVD, CD and CD-ROM. The approach is less personalised. The online bulletin board, First Class, allows students to communicate via class-specific bulletin boards, and provides the facility for synchronous chat. Tutors arrange one or
two face-to-face tutorials with students during the semester, and provide email and telephone support. The tutor has the role of a mentor/coach, there to answer questions and provide support, but they have no control of the course materials themselves.

With all of these systems, what becomes clear is that by using e-learning environments the tutor does not disappear, the role instead becomes one of mentor-guiding the students through the learning process. A certain level of scaffolding and coaching can occur via the e-learning application, however the tutor is needed to help clarify the learning goals and to provide guidance through the materials, the thinking, personalisation as well participating in assessment. The role of the tutor therefore becomes not so much as a teacher – much of that is situated within the learning materials themselves, but rather as participant in the learning process.

E-learning tutors can spend significantly more time in moderating, researching and commenting on queries from students than do traditional tutors. In a 2005 study of three different distance education delivery methods, this was particularly true of an asynchronous Virtual MBA course, using a 2D bulletin board as the primary communication tool. (Gill, 2005) This increased support is at odds with student expectations of teaching support, which are lower when undertaking a completely online course (Biggs, Simpson, & Walker, 2006). Similarly students at the Orchard Primary School in Singapore took three times more time on their task within the 3D environment than would occur in a traditional classroom setting (Lim et al., 2006). The pedagogical design of the environment therefore determines the level of extra commitment required by tutors. This is at odds to the view that e-learning provides a cheaper alternative to traditional face-to-face teaching.

All of the above examples describe the role of a human teacher, not the crucial role of the information/educational design itself or the rest of the socio-physical environment - which needs to involve the educator. Dillon (2004) bemoans the fact that there is to date no viable theory of ICT in education – the focus thus far has been on training academics and course designers in the software skills needed for online learning design. Dillon states that specialist teaching in ICT should instead involve an examination of the theories and assumptions of the nature of knowledge that
underpin the computer applications themselves. Specialist ICT teachers should challenge the way ‘software applications legitimise, ignore or even de-legitimize epistemological methods such as deduction, induction, interpretation, intuition and introspection’ (Hodgson, 1993 in Dillon, 2004, p. 148). He calls for an ‘ecology of ideas’ - an interaction between the mind, action and environment where perhaps an ecology of education could subsume the current thinking on knowledge, ideas and learning (Dillon, 2004, p. 148). It is the purpose of this research to take the first steps along the path to this end.

Figure A01-2 The tutor answers questions, provides explanations and provides support to online students, regardless of involvement in course content.
Figure A01-3 The tutor as quest giver provides support for students and is the mentor as the students interact between themselves and the materials.

*Teaching strategies to accompany this pattern

***

*Consider These Other Patterns

Part of the solution to this pattern is tutor as mentor/coach. Refer to the *Eliciting Moderation* pattern to outline techniques to best moderate online discussion, regardless if it is an asynchronous bulletin board or an online conference situation.
A03. Pattern Two

Elicitation Moderation

*Background*

Part of the role of tutor for an online course is providing support in the form of online moderator. This role requires the skills of eliciting involvement from the students in the online discussion. This is not always as easy as it sounds – there are certain dos and don’ts in the role of moderator. It is a function that has to be managed – if not the tutor risks either swamping the discussion, or simply discouraging the students from participating. As students interact between themselves they will learn from each other, as well as from the tutor/moderator.

This pattern is designed to aid tutors in their online moderation – regardless of virtual environment, it is designed to elicit involvement, interest, discussion, ideas and to draw even the most timid of students into being involved in the online conversation. This pattern should be used in conjunction with *The Role of Tutor* pattern.

***
**Problem**

If constructivist theory claims that students construct their own knowledge by participating in student-to-student interaction as well as student-tutor interaction, how should the moderator create an atmosphere that encourages students to participate in online discussions?

A moderator in an online discussion is generally accepted to be a content specialist – someone who has the background knowledge to fill in the gaps of the students’ knowledge. However, the role of online moderator is a unique one, that of both facilitator and participant. It is important for an online moderator to ‘create a community’ with the participants, encouraging the students’ participation in the online discussion. This is a challenge, as 70% of information transmitted in face-to-face communication is done so via visual and auditory cues. So the challenge for the moderator is to compensate for this lack of cues to facilitate discussion. However, the moderator also has to be careful with language and be sensitive in their chosen words (De Schutter, Fahrni, & Rudolph, 2004). The quality and quantity of interpersonal interaction strongly influences the perception of the effectiveness of the learning (Sargeant et al., 2006).

There are primarily two different modes of online discussion, synchronous and asynchronous. In 2D environments these manifest themselves in discussion boards and online chat. But this pattern is not limited to 2D applications. Discussions can also take place in 3D environments using an avatar-based interaction, either in real-time, as replays, or as non-linear messaging. Online moderation can also take place using webcams and audio VoIP - online conferencing. In all instances, the role of the tutor is to facilitate discussion, collaboration and participation.

**Solution**

Allow participants the freedom to express themselves, facilitate a community of learners and create an environment of trust. Use a model of mentoring, facilitating and coaching for online discussions. Foster active learning and provide scaffolding for students to become their own facilitators of learning (Murphy et al., 2005).
Support both process and content, provide meaningful feedback to learners and guide interaction. Employ questioning strategies and provide additional information and prompts as the need arises (De Schutter et al., 2004). By promoting deeper interaction with the content you will encourage knowledge construction (McLoughlin & Luca, 1999).

Use the strategies below to guide you in your solution:

1. **Anonymous Nicknames**

   Allow students to participate in online discussions using an anonymous nickname. This seems a contradiction to building trust in the online environment, but students participate more in content related discussions when using an anonymous login.

2. **Allow Photo and rich media postings**

   By allowing students to post photos, video clips and links to external resources, they are able to build personalised biographies so that students can get to know each other as people, and interact on a social level.

**Case Study**

A study conducted at Tel-Aviv University’s School of Education with eleven grade eight students (Oren, Moiduser, & Nachmias, 2002) revealed that more content related interactions occurred when using anonymous nicknames, regardless of whether the forum was moderated or not. The anonymous nickname made the students feel that they could say what they wanted, without repercussions in the real world. ‘Anonymity was detected as a factor that encourages the participation of the whole group, in contrast to a face-to-face situation where typically some students do not take part in the discussion’ (Oren et al., 2002, p. 7). The presence of a moderator was also found to reduce the number of negative social interactions, thus addressing the issue of trust (Oren et al., 2002).
Figure A01-4 Anonymous logins allow free interactions between participants in the social learning space.

**Teaching strategies to accompany this pattern**

*Encourage Social Interaction*

Moderate the discussions in such a way as to encourage social interaction between students. In synchronous situations one way of doing this is to allow participants time prior to the beginning of the session to congregate and chat. This allows the moderator time to get to know the participants, help iron out any technical issues and introduce the topic to be discussed (Anderson et al., 2006). In asynchronous systems, such as bulletin boards, help novices feel comfortable and welcome, by introducing yourself and encourage other participants to post about themselves, even short biographies and photographs (Sargeant et al., 2006).
By creating a social climate and encouraging student-to-student interactions, students are able to gain knowledge from each other, rather than from a teacher who dominates discussion. Refrain from dominating the discussions, and from interacting with individual students, instead facilitate intense student-to-student group interactions. Encourage students to be friendly and create a calm and relaxed atmosphere. Give the students the freedom to interact on a social level, rather than restricting discussions purely to course content, and give the social interactions legitimacy (Oren et al., 2002). Social settings allow students to engage in socio-cognitive language based operations such as generalising, hypothesising and inferring. Learning and abstraction arise out of the learner's increasing control over these processes and awareness as to how to consciously apply them (McLoughlin & Luca, 1999).

Enhance the social situation by giving positive feedback, and discuss with the group ways to facilitate social interaction. Emphasise the importance of peer feedback by allowing the students to interact not only during the learning activities, but beyond them. Encourage the students to look not only to yourself as a source of help, but to each other (Oren et al., 2002).

**Facilitate Knowledge Construction**

In order to guide students into constructing knowledge from the online interaction, rather than merely displaying and comparing already existing ideas, you will need to re-educate the learners to interact with the ideas at a deep level. Formulate a process that allows students to inquire into concepts, critically analyse their own views and revise concepts when exposed to conflicting ideas. This necessarily will require the students to articulate their understandings and misconceptions – which is difficult when students edit their own misunderstandings in order to appear to be knowledgeable. Social inhibitions often prohibit open inquiry – particularly if forum contributions are being assessed (McLoughlin & Luca, 1999).

One way of achieving this is to present the students with a real-world problem that is largely ill-defined, which will allow students to use problem solving skills and foster collaboration. Using case-based or ‘real’ world problems will enable students to construct their own knowledge while considering different approaches and perspectives (McLoughlin & Luca, 1999). This promotes *reflective observation*, which
allows learners to reflect on their own experiences from many perspectives, before moving into deeper thinking, _abstract conceptualisation_ and then applying their newfound theories to solve problems, what Kolb calls _active experimentation_ (Kolb, 1984).

Be prominent when you scaffold student learning and criticise ideas as this will help students engage in a higher order of thinking. One way of doing this is to post the solution to a problem, moderate the discussion, and then post a summary of the different viewpoints put forward by the group. In the following weeks, make each team take turns to post a solution. You can help them by mentoring them offline before they present their solution. Play ‘devil’s advocate’ in the resulting discussions to challenge the different viewpoints and to promote deeper enquiry (McLoughlin & Luca, 1999). It’s important to perturb the participants, to challenge their existing thinking so that they can incorporate new ideas into their learning.

By engaging the learner, promoting collaboration, encouraging self criticism, allowing the students to articulate their own understandings and misconceptions and reviewing the concepts arising from conflicting ideas and viewpoints the students will be able to successfully construct new knowledge from their online experience (McLoughlin & Luca, 1999).

**Elicit Participation**

Try to answer each specific question to make the students feel that you are involved with the discussion, but open up the discussion by answering questions with a question such as ‘Can you think of any other cases like this?’ Encourage the wallflowers to post by addressing questions directly to them, such as ‘that’s a very good point, X can you think of any other issues relating to that?’ (Sargeant et al., 2006).

Ask provocative and open-ended questions. Insert provocative prompts into the discussion, that make the participants question the views given to date, such as _‘Given the conflicting viewpoints for this problem, how would you approach this situation next time?’_ to add structure to the online discussion (McLoughlin & Luca, 1999).

Alternatively, ask the students for challenging real world issues that they have to deal with, and what they hope to gain from the course. Then encourage student-to-student
interactions as they consider these challenges, using case-based questions such as ‘What advice would you offer John based on your experiences?’ (Sargeant et al., 2006, p. 135).

Be prominent in your mentoring early in the course, but disengage gradually to allow the students to develop their own skills in questioning, self-appraisal and problem solving.

*Consider These Other Solutions

***

*Consider These Others Patterns

When considering this pattern, consider the ROLE OF TUTOR pattern to explore other ways that the tutor can interact with the students in the online environment.

References


Appendix 1: Trial Patterns


