

Using StudyNet to facilitate students' learning

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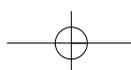
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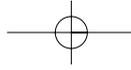
Summary

This article discusses the utilisation of StudyNet to facilitate students' learning on a Level 3 Physiotherapy module. The students' perceptions of StudyNet and its usage were evaluated by questionnaire and also by an analysis of the 'traffic' on the discussion forum. A separate questionnaire was used to evaluate the computer use and confidence of students from all three cohorts of the degree. The module incorporated a variety of incentives that encouraged the students to engage with StudyNet – tutor-generated materials, student-generated materials, seeded discussions and assessment based on electronic papers. Although two cautionary messages emerged, the questionnaires and other sources of data suggested that overall this has been a successful implementation.

Introduction

This article will discuss the utilisation of StudyNet, a Managed Learning Environment, to facilitate students' learning on a Level 3 Physiotherapy module, Perspectives of Healthcare Provision (PHCP). This evaluation centres on the experiences in StudyNet's pilot year. The PHCP students' perceptions of StudyNet and its usage were evaluated by questionnaire and also by an analysis of the 'traffic' on the PHCP discussion forum. A separate questionnaire was used to evaluate the information technology (IT) usage and confidence in students from all three cohorts of the degree in order to set the PHCP evaluation into context. A number of pedagogical aspects of this initiative will be considered in the discussion, including the development of IT skills, the structure of learning resources, metacognitive skills and information





management, peer learning and some differences between face-to-face discussions and online discussions. It will also consider some difficulties encountered, including students reluctant to engage with the technology.

Encouraging students to use StudyNet

PHCP investigates the health-related issues pertinent to physiotherapy students who are about to graduate and also considers practical employment issues.

The module co-ordinator used the following strategies to encourage students to use StudyNet:

- **Tutor-generated resources:** Lecture notes, supplementary notes, links to relevant websites and PDF versions of key articles from the students' professional journal (with the copyright holder's permission) were posted on the module database.
- **Student-generated resources:** PHCP incorporates a series of student-led seminars for which the cohort is divided into three separate groups of 22 students. Each group of students produced an electronic file (Word or PowerPoint) to support their set of seminars and these were posted on StudyNet.
- **The discussion forum:** Discussions were seeded by the module co-ordinator on a number of occasions. The seeds related to content, coursework and assessment.
- **The assessment:** Part of the module assessment was a 2,500 word essay that entailed discussing an article chosen from a predetermined list. The articles on the list were selected because they could be accessed via the LRC's electronic journal catalogue.

The evaluation

This sought to ascertain the following:

- The usage of IT by students in all three years of the programme, together with their confidence in using various aspects of IT.
- The third year students' perceptions about the usefulness of StudyNet and their use of it in PHCP.

The evaluation drew on several sources of data:

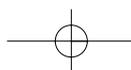
- *Questionnaire 1* was administered to all three years of the programme after StudyNet had been available for 12 weeks (1st years = PTY1, 2nd years = PTY2 and 3rd years = PTY3). It evaluated confidence with various aspects of IT, together with estimates of the students' usage of IT.
- *Questionnaire 2* evaluated PTY3's usage of StudyNet and their perceptions of its role in PHCP. This was administered following 18 weeks' engagement with StudyNet.

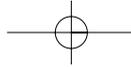
The data from the questionnaires was supplemented by an analysis of the PHCP discussion pages and a summary of the materials posted on all the physiotherapy databases.

Results

Demographic information

The PTY3 cohort comprised 66 students, of whom 10 (15%) were male and 20 (30%) mature. PTY2 comprised 65 students, of whom 12 (18%) were male and 15 (23%) mature. PTY1 comprised 73 students, of whom 17 (23%) were male and 14 (19%) mature.





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Results of Questionnaire 1

This questionnaire was completed by 88% of PTY3, 82% of PTY2 and 89% of PTY1. It used a four-point scale to rate the students' confidence in using various aspects of IT. The items were very confident, moderately confident, not very confident and not confident. In order to summarise these data, the percentage of students rating themselves as very confident or moderately confident have been aggregated to indicate an essentially 'confident' predisposition. These are shown in Table 1.

Table 1. The percentage of students with an essentially 'confident' predisposition to various aspects of IT.

| | PTY1 | PTY2 | PTY3 |
|-----------------------|------|------|------|
| Word processors | 98 | 100 | 98 |
| Internet | 93 | 70 | 72 |
| Spreadsheets | 71 | 47 | 45 |
| Voyager | 69 | 96 | 98 |
| Information databases | 37 | 36 | 90 |
| Electronic journals | 28 | 36 | 84 |
| StudyNet | 92 | 72 | 93 |

Questionnaire 1 also asked about home access to StudyNet – this was reported by 60% of PTY1, 53% of PTY2 and 71% of PTY3. In addition, there was an open question inviting further comments. Although a number of issues were reported, of particular note was the suggestion from 19 students that more computer training would be appreciated.

To supplement this questionnaire all the module databases (for all three years) were accessed and the contents analysed in terms of:

- number of tutor-generated items
- number of student-generated items
- total number of contributions to each cohort's discussions

The results are shown in Table 2.

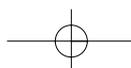
Table 2. A summary of StudyNet materials posted for each cohort.

| | PTY1 | PTY2 | PTY3 |
|--------------------------|------------|-----------|------------|
| Tutor materials | 64 | 30 | 21 |
| Student materials | 30 | - | 60 |
| Discussion contributions | 48 | 35 | 61 |
| Total | 142 | 65 | 142 |

This indicates that the overall number of entries posted on StudyNet was the same for PTY1 and PTY3 but the volume for PTY2 was only 46% of this level.

Results of Questionnaire 2

These results relate to PTY3's experience of StudyNet in relation to their PHCP studies and the questionnaire was completed by 57 (86%) of the students. All but one student said that access to StudyNet was 'quite easy' or 'very easy' and all but one said StudyNet was 'quite easy to use' or 'very easy to use'. Twelve students (18%) said they did not use StudyNet to support their studies, 15 (23%) used it some weeks and 30 (46%) used it 'every week'.



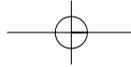


Figure 1 shows the perceived usefulness of different aspects of StudyNet, indicating that the students found all the StudyNet features useful to varying degrees.

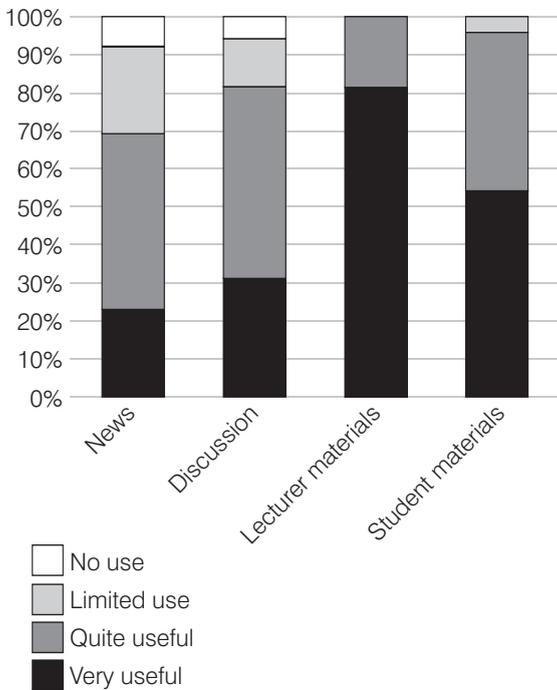


Figure 1 – Usefulness of various features of StudyNet – PTY3

Questionnaire 2 also included the open questions below (frequency of occurrence is shown in brackets).

What advantages of StudyNet have you found?

- Access to a variety of resources, e.g. seminar notes and lecture notes (35)
- Easy to access (location/time of day) (19)
- Useful for contacting others (5)
- Useful to see other students' opinions (3)
- Equitable – all students get access to same input (3)

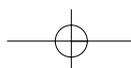
What disadvantages of StudyNet have you found?

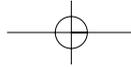
- Access can take time (5)

Has StudyNet changed your attitude to computers at all?

- Yes – for the better, e.g. easier, more confidence (10)
- Yes – for the worse (2)
- No – still hate them (1)

The third source of data was the discussion 'traffic'. In Semester A there were 12 discussions held on the PHCP database which are summarised in Table 3.





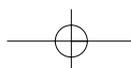
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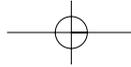
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Table 3. An analysis of the PHCP discussion traffic

| Discussion number | Number of messages | General message | Giving PHCP related information | Asking for help | Offering to help | Making times to meet face to face |
|-------------------|--------------------|-----------------|---------------------------------|-----------------|------------------|-----------------------------------|
| 1 | 1 | | T | | | |
| 2 | 2 | S, t | | | | |
| 3 | 4 | s | T, t | | | s |
| 4 | 3 | | t, s | S | | |
| 5 | 3 | | | | S | 2s |
| 6 | 1 | | T | | | |
| 7 | 19 | | T | | 4s | 14s |
| 8 | 1 | | | | S | |
| 9 | 2 | | | S | s | |
| 10 | 2 | | t | S | | |
| 11 | 2 | | t | | S | |
| 12 | 2 | | t | S | | |
| Totals | 42 | 1S 1s 1t | 4T 1s | 4S 1s | 3S 5s | 17s |

S = student initiating the discussion
 T = tutor initiating the discussion
 s = student participating in the discussion
 t = tutor participating in the discussion
 N.B. Numbers indicate multiple entries.





This indicates that 4/12 (33%) of the discussions were initiated by the tutor, in each case giving information. Conversely, 8/12 (67%) of the discussions were started by students, typically asking for help (4/7) or offering help (3/7).

Although the mean number of messages associated with each discussion was 3.5, this was heavily influenced by discussion number 7. The median and mode were both 2.

Seven per cent (3/42) of the messages were of a general nature, 24% (10/42) offered module-related information, 10% (4/42) asked for help, while 19% (8/42) offered help. The most frequently used aspect was arranging to meet face-to-face – 45% (19/42).

Discussion

The response rate for each cohort was between 82 and 88%, which is good for surveys of this nature. The demographic data suggests that there is only minor variation on the gender and standard entrant/mature student composition of the cohorts. These factors are, therefore, unlikely to explain any of the differences between the groups.

Students' confidence with common applications

Several trends emerged from the data. If common applications are considered (word processing, Internet, spreadsheets), the data in table 1 suggest that, overall, PTY1 were more confident than PTY2 and PTY3. PTY1 were most recently in school where computer use is increasing, due to initiatives such as 'The National Grid for Learning (1998-1999)' (Somekh, 2000). The recognition of IT as part of educational 'core skills' will strengthen this trend.

A second trend can be seen. The students overall were more confident in the use of word processors than the Internet and more confident in the use of the Internet than

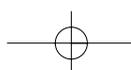
spreadsheets. This too could be a result of exposure to the various applications. Nachmias et al's (2001) survey of high school students' IT usage suggested that students used word processors more than the Internet, and the Internet more than spreadsheets.

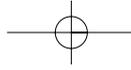
Confidence with University or module-specific applications

When applications specific to the University or typically associated with HE are considered, a different pattern emerges. When confidence in Voyager, electronic databases and electronic journals are considered, PTY3 are the most confident and PTY1 the least confident. Once again, this probably reflects the exposure of the students to the different applications: undergraduates in the first year of the Physiotherapy programme rely heavily (although not exclusively) upon core texts for their reading. In the second and third year there is a greater expectation to research beyond core texts (for example, by using electronic databases).

Confidence in the use of StudyNet

Table 1 suggests that PTY1 and PTY3 have a similar level of confidence in StudyNet that is greater than that of PTY2. Why is this so? The questionnaires were administered when each group of students had experienced StudyNet for 12 weeks and there is no reason to expect that PTY2 was a less IT confident group overall – they had a similar level of confidence to PTY3 in word processing, Internet use and spreadsheet use. Once again, the explanation may lie with the level of utilisation of StudyNet. The data in Table 2 indicate that there were more than twice as many items posted on the PTY1 and PTY3 sites compared to PTY2. Although this does not directly reflect how much the students used the sites, it may be an indirect indication of StudyNet utilisation and could explain PTY2's relative lack of StudyNet confidence.





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The development of IT skills

The results suggest that confidence with common applications was greatest in PTY1, whilst PTY3 were the most confident cohort with module/institution-related applications – but how did PTY3 develop these skills? The formal IT training for the physiotherapy students consisted of approximately three hours of instruction in the use of Voyager and literature searching, spread throughout the first and second years. They also received a demonstration of StudyNet and could access instructional text and 'drop-in' help. There is a debate about whether IT skills should be taught as a subject itself or integrated into other subjects. McDonald et al (2001) argue that using computers for purposeful activity (e.g. writing, research, numeric manipulation) is important. Although IT confidence appeared to develop with relatively little input from staff, this may not justify the lack of a more structured input because poor or unsophisticated strategies may result (Foster, 2000). The 19 respondents who requested further StudyNet training reinforce this point.

Access issues

All but one student found accessing StudyNet quite or very easy. Moreover, between 53-71% of each cohort reported accessing StudyNet from home. These home access figures are comparable with the 69.9% reported by Facer et al (2000).

In response to the open questions on Questionnaire 2, 19 PHCP students commented favourably upon being able to access the PHCP site at any time of day or from anywhere. The ready access to this technology is a well-documented advantage, reducing constraints upon students as they plan their own learning (Barnett et al, 1996; Motiwalla and Tello, 2000; O'Donoghue et al, 2001).

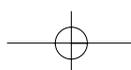
Perspectives of Healthcare Provision 'drivers'

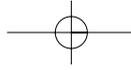
The four drivers that underpinned the strategy to encourage participation will now be discussed.

Tutor materials

Lecture notes and other tutor-generated materials were highly regarded by the students (Figure 1) and the convenience of access to such resources was noted. The nature of teaching materials and their availability via such routes as MLEs and the Internet has raised important questions about the nature of teaching and learning. Tutors need to reflect on the intended outcomes of learning activities and consider the process by which students may achieve those outcomes. The degree of guidance, or scaffolding, provided for students will affect these facets of learning.

Too little structure and guidance may lead to wasted effort, particularly early in a degree programme – although a radical constructivist may argue for the importance of students pursuing blind alleys and experiencing negative instances (Jennings et al 1997). Alternatively, a social constructivist will provide a guiding framework which students typically favour (McDonald et al 2001). However, too much guidance and provision of resources may result in students failing to develop important metacognitive and information-managing skills. Tutors need to consider carefully how these issues will impact upon the development of these skills. In order to address this in PHCP, the structure involved an introductory lecture to outline a topic and give some direction for preparing for the student-led seminars. In addition, the assessment of the early seminars was weighted in favour of searching and presentation skills, whilst the later ones were weighted towards application of theory and critical evaluation.





Student-generated resources

The students posted the material from their seminars on StudyNet and these were well received (see Figure 1). This driver had two observable benefits.

Firstly, the students could access the work of other groups and look at other students' interpretations of the seminar material, allowing them to confirm or challenge their own views, an invaluable aspect of learning (Harasim, 2000). By enabling wider access, this aspect of StudyNet enhanced the peer learning already inherent in these student-led seminars.

Secondly, the requirement to post materials on StudyNet meant that the students all produced electronic materials for the seminars. The students were instrumental in developing these IT skills through arranging PowerPoint tutorials amongst themselves and accessing printed and electronic tutorials. It is suggested that this was a stimulus for improved IT skills, improved presentation skills and enhanced peer learning.

Assessment based on electronic articles

Part of the PHCP assessment was structured around accessing articles electronically and the students showed a marked increase in confidence in this activity compared with other cohorts. Whether this was due to the nature of this assessment task or a general increase in access to electronic journals is unclear.

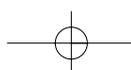
The discussion forum

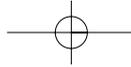
The discussion facility of StudyNet was valued by the students (Figure 1) but analysis of the traffic suggests that its function was less to do with actual knowledge construction and more to do with supporting various activities that underpin learning. It has been suggested that students consistently prefer face-to-face

contact (Monteith and Smith, 2001) where the tutor (or fellow student) is better able to clarify meanings (Jennings et al, 1997).

This does raise the question of whether it is useful to encourage campus-based students to participate in online discussions. Despite the preference for face-to-face communication by most students and tutors, there are reasons why online participation can be valuable. Contributions to online discussions may be more reflective because of the need to compose in writing (Hammond, 1999). Some students view online communication as a more social and convivial means of communication than face-to-face (Harasim, 2000) and some people who prefer not to participate in face-to-face tutorials may find their 'voice'. However, the permanence of messages discourages some from participating (Hammond, 1999). Forty four students (67%) rated the discussion facility as 'quite useful' or 'very useful', yet only 15 had actually posted messages. Clearly benefits may accrue even for people who only read discussions. Hammond (1999) termed such people 'quiet learners'.

It could be argued that the above goals (reflective contributions, enabling different people to participate, enhancing student choice and access to a wider group of students) are sufficient drivers for module designers to justify mechanisms that encourage campus-based students to participate in online discussions. If so, Motiwalla and Tello (2000) suggest that additional training may be required to equip all students with the skills to participate effectively in online discussion.





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Other issues

It is important to note that 12 students did not access StudyNet to support PHCP, one 'still hated' computers and two said the experience had changed their view of computers for the worse, including the following comment:

'I am actually getting a bit peeved that a degree in *physiotherapy* appears to be integrated with a required degree in computer skills!'

Other authors have also found a lack of universal acceptance of IT by students (Akerlind and Trevitt, 1999; Nachmias et al, 2001). Nachmias et al found in their study that 10% of high school students were highly resistant to using computers, despite being surrounded by the technology. This raises concerns about compulsory participation and, as MLEs become more prevalent, course structures may disadvantage students who are reluctant or unable to embrace the technology. Ensuring students have the relevant computer skills is an essential requirement of courses that depend upon utilisation of computers (Milheim, 2001).

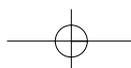
Conclusion

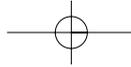
This article has discussed the implementation of four strategies designed to encourage students to use StudyNet to support their learning. The data have suggested that overall this has been a successful venture. The majority of students have found StudyNet easy to access and use. They demonstrated an increase in IT confidence that is probably related to the increased usage of computers which the structure of PHCP encouraged. In addition, there was a noticeable improvement in presentation skills. This was partly driven by the need to provide materials for posting on StudyNet in electronic form and partly due to peer support.

The students were very positive about the materials available via StudyNet. Although tutor materials were the most highly valued, great store was placed on those of their peers. This is another way in which peer learning has been enhanced via StudyNet. The discussion facility was well received but was used primarily for offering or asking for help or arranging face-to-face meetings. Although campus-based students can usually meet face-to-face, online discussion can facilitate learning in different ways. This potential should not be overlooked.

Two cautionary issues emerged. Students had to largely teach themselves to use StudyNet. Whilst most expressed confidence in their level of skill, there is the potential for this to be less than optimal. Strategies to ensure students can achieve an appropriate level of skill need to be in place – preferably embedded into their studies close to the times at which they will need them. Potentially more serious, some students may remain resistant to the use of computers and this needs both exploration and consideration.

Several developments the following year included offering more support to students who were reluctant to engage with StudyNet; encouraging students to use StudyNet by posting any new information about the module on it before using other locations (such as the noticeboard); an increased number of weblinks, including some recommended by students, and using electronic links to the articles on which the coursework is based.





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Biographical notes

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