Managed Learning Environments and an Attendance Crisis?

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Abstract: Students who have the benefit of a Managed Learning Environment (MLE) are very appreciative of the facility to access lecture notes, practical and tutorial exercises and other learning resources. This access allows students to work independently and in many students' eyes, obviates the need to attend all timetabled sessions. Should the lecturers be worried about this? Blended learning, with its mixture of online and face-to-face activities, allows for students' different learning styles and for balancing external commitments. We report from a University in which the MLE, StudyNet, is extensively used on the majority of degree programmes and is regularly praised by the students. In this digital age the expectation of students is that all resources should be available electronically. However, a short survey identified a general unease among academics that these facilities adversely affect attendance and consequently student performance. Our broader study, at a mid-point in an academic year, investigated relationships between attendance, performance in assessed coursework and students' preferred ways of working. We found that students rated the contact time very strongly but placed most emphasis on carrying out work for themselves. There was a mismatch between many students' perceptions of their use of the contact hours and the evidence from attendance records. Overall, our study sheds some light on the complex relationships between blended learning, student behaviour, attendance, and attainment.

Keywords: Blended learning, attendance, Managed Learning Environment.

1. Introduction

Blended Learning at the University of Hertfordshire is seen as "a combination of established ways of Learning and Teaching and the opportunities offered by technology in order to improve students' learning and increase flexibility in how, when and where they study" (Blended Learning Unit 2006). This allows for a mixture of class contact hours and e-learning activities for the students can carry out in their own time and location. The increase in the range of different learning activities for students has been in part facilitated by the development and extensive use of the University's Managed Learning Environment, called StudyNet. Teaching strategies are moving from the traditional use of lectures and tutorials through to supporting the students through to a blend of traditional and online activities using a variety of media. There may be some tension in moving from established teaching practices to new approaches that claim to provide effective blended learning universally within an institution. Class-contact, such as a lecture, has been the principal way in which students are directed in their learning through a mixture of explanation, examples and guidance on reading and tasks. But providing lecture notes online, either before or after a class, can lead some students to believe that these notes are an adequate substitute for attending (and indeed the students are right in some cases!). The problem arises when a student does not replace the attendance with equivalent study, gets behind and finds subsequent work difficult to follow. This is not a new situation and first appeared with the availability of photocopying facilities, but it can be exacerbated by the ready availability of online resources. Students may find it easy to file away such information without engaging with it.

Attendance does not necessarily mean engagement, but lectures are not necessarily just about transmitting information and can involve a variety of activities depending on the topic, size of group, and other activities associated with the course (Oliver and Conole, 2002). Seminars, tutorials and practical (laboratory) sessions provide opportunity for interaction with the tutors and with peers. Learning is a social activity in which learning is enhanced by belonging to a community of practice (Wenger in (Smith 1999)). This interaction can be achieved through good use of electronic discussion forums and online activities to construct knowledge, but this is difficult for large groups and needs intensive nurturing by the online tutor. The social phenomenon of community can be put to good use in support of online learning (Brook and Oliver 2003), but in a blended learning context the sense of belonging will come from contact with lecturers and peers. We agree that "the flexibility of technology based instruction and the social interaction of traditional education are now available through blended learning" (Harriman 2004).

Lecturers often regard attendance as an essential component contributing to a student's success, as it provides the opportunity for engagement with

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the subject material and for timely feedback. Equally important is the sense of belonging to a learning community and mutual support from other students. Colby (2004) found a direct correlation between attendance and attainment, and this correlation was corroborated in a parallel study at a different institution by Burd and Hodgson (2005). If a course team is unhappy about the level of student attendance and looking for a likely culprit, the availability of resources on the MLE can seem a possible option. In section three we describe the reaction of lecturers to posting resources on an MLE.

Our study is based on a first year programming course, which is designed as a series of learning activities, heavily focused on the student carrying out programming tasks to reinforce the concepts. This paper presents some of our findings at a mid-point in an academic year. In this paper we report on the conduct of four investigations:

- An initial survey in induction week on students' expectations of a Computer Science degree
- A survey of academic staff attitudes to the MLE and attendance
- A survey of students' perceptions of their studying behaviour
- An analysis of students' use of the classroom discussion facility provided by the MLE

2. Background

Programming 1 is an introductory programming course for students on the BSc in Computer Science aiming to develop the student's competence in programming. Class contact includes 2 one-hour lectures to the whole cohort, with a one-hour tutorial and a one-hour practical in small groups with a tutor. The lectures and a textbook outline concepts but also demonstrate programming activities. The practical and tutorial sessions allow students to engage in programming activities with tutors providing help when they get into difficulties. The use of StudyNet is a key element in the delivery of the course and contributes to a blended learning approach by providing the materials needed for self-study. Although students are encouraged to attend, all teaching material (other than the textbook) is posted on StudyNet, together with solutions (after a suitable interval) and the use of a class discussion forum on StudyNet is encouraged. StudyNet is also used for posting self-tests and specimen assessments as well as general feedback and administrative information.

Attendance at class contact sessions, reading the textbook or accessing resources on StudyNet do not in themselves guarantee success on this course. To develop the skills, students must engage in programming and much of this needs to be done in their own time. Unfortunately, programming can be a very unforgiving activity; very minor errors in syntax can mean that nothing works. To correct problems, the student must have the correct model of how the computer will behave, and a precise knowledge of how the instructions must be written. The inability to identify the causes of problems, and how to put them right, can lead to much frustration so timely and appropriate feedback is essential. Fortunately, programming is a computer-based activity and can provide its own feedback. Program development environments include software, which check whether a program is syntactically correct. Compilers not only detect syntax errors but also provide diagnostic information on the nature of those errors. In addition, programs can be executed and so there is a practical way of testing whether a program is functionally correct and performs according to specification.

With compilers providing feedback, it would seem that personal attendance might not be essential. However, computer-based feedback is restricted in nature and students still need to understand the rather cryptic error messages, identify what is causing the errors and know how to correct the errors. In addition, programmers are poor at fully testing their own programs; typically testing some of the obvious functionality but not identifying all of the situations, which may cause a program to fail. So computer-based feedback systems are useful to students who have some idea of what they should be doing, but are of limited value to those who don't. Finally, there are usually a number of ways in which a program can be written, and there are no automated feedback systems, which can assess the quality of a program design. There is then still a need for personalised diagnostic and explanatory feedback. Traditionally such feedback has been provided during practical and tutorial sessions requiring student attendance. However, an MLE can be used to provide some of this feedback electronically via email, discussion forums and by posting solutions or guidance, providing information and timely feedback outside scheduled class contact time.

3. A survey of lecturer's reactions to one aspect of an MLE

We conducted a short email survey of lecturers within our Faculty. The survey comprised one question:

> *"Do you think that the availability of lecture notes and other resources on StudyNet [the*

MLE] adversely affects students' attendance?"

We received 37 responses. Table 1 provides a summary of the responses. The table indicates that a clear majority of these lecturing staff think that StudyNet has affected student attendance.

Table 1: Summary of lecturers' responses to survey

Response	Frequency	%
Yes: StudyNet adversely affects student's attendance	28	76
No: StudyNet does not adversely affect attendance	5	13
Qualified: StudyNet may adversely affect attendance	4	11
Total	37	

A number of respondents provided additional comments. For example, one respondent wrote:

"I strongly suspect that for some students the fact that they have all the slides, notes etc will mean that they think they have all the relevant material and it is only when they come to revise from those materials that they realise they cannot make head nor tail of the slides"

And another respondent wrote:

"Yes, I have had one student explicitly say that they do not come to lectures because they can get the (excellent) study guides for the course from StudyNet"

A third respondent explained that they thought other factors were also affecting attendance, such as the tuition fee contribution and the pressure on students to earn while they study. Other comments were about the need to adapt lectures so that there was added value for students in attending, which they would not gain from just accessing the notes or slides. This suggests that the MLE should be changing the way in which courses are being delivered, which is consistent with the aim of blended learning.

4. A survey of students' perceptions of attendance and related factors

At a mid-point in the academic year, we asked students on the first-year programming module to complete a short questionnaire. The questionnaire asked students to self-assess their progress on the module, to self-assess their attendance, and to provide their opinions on their use of several resources and their involvement in several activities. 116 students (~ 50% of the cohort) completed the questionnaire. Of these responses, 100 students identified themselves allowing us to compare their responses on this questionnaire with other data we have collected.

4.1 Perceived attendance vs. actual attendance

Figure 1 presents box-plots of students' perceived attendance vs. their recorded attendance at practicals and tutorials.

Perceived attendance is 'measured' on an ordinal scale of five possible responses: attended a few sessions, attended some sessions, attended about half the sessions, attended most of the sessions, attended almost all of the sessions. We have normalised the recorded attendance to take account of the fact that we have some missing data for some teaching sessions, and other teaching sessions were cancelled or re-scheduled e.g. due to illness, other University activities etc. The box-plot is useful for illustrating the range of actual attendance against perceived attendance. The most notable inconsistency is with those students who perceive that they have attended most of the time (the fourth category on the y-axis of the box-plot). The reality is that half of these students have attended less tutorials and practicals than 60% of the time.

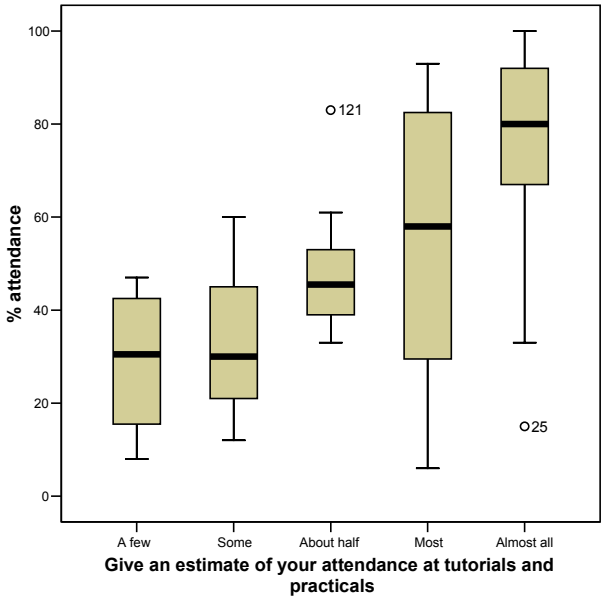

Figure 1: Box-plots of perceived attendance vs. actual attendance

4.2 Perceived attendance at lectures and attendance at tutorials and practicals

We were interested to find out whether students were selective in the sessions they attended. The work carried out in practicals and tutorials could arguably be carried out in a student's own time, but the lectures could not be so easily replaced.

Table 2 presents a cross-tabulation of students' perceived attendance at lectures, and their perceived attendance at tutorials and practicals. The table indicates that students are consistent in their attendance of the two types of sessions; in other words, a student either attends lectures *and* tutorials/practicals, or doesn't attend lectures and tutorials/practicals.

Table 2: Cross-tabulation of perceived attendance

	Attendance at tutorials and practicals					
Attendance at lectures	A few	Some	About half	Most	Almost all	Total
A few	1	0	0	0	0	1
Some	2	3	1	0	0	6
About half	0	1	4	2	4	11
Most	1	1	5	12	5	24
Almost all	1	1	7	10	54	73
Total	5	6	17	24	63	115

We need to be careful with this data as it represents students' perceptions. For example, an alternative interpretation of Table 2 is that when students were responding to the questionnaire they wanted to be consistent in their answers, and also didn't necessarily want to think too deeply about their responses. As a consequence, students may have decided to provide similar answers to both questions without necessarily thinking in detail about whether their patterns of attendance were different for the different types of sessions.

4.3 Recorded attendance and student assessed performance

At the time of writing this paper, students had completed the first three of five assessments. These assessments consisted of: a practical test under exam conditions, a written test under exam conditions, and a programming assignment that was validated with a practical test under exam conditions. Figure 2 presents a scatter-plot of students' recorded attendance (at tutorials and practicals only) against their total assessment mark for the first three courseworks. The scatter-plot clearly indicates that there is no obvious association between these two variables.

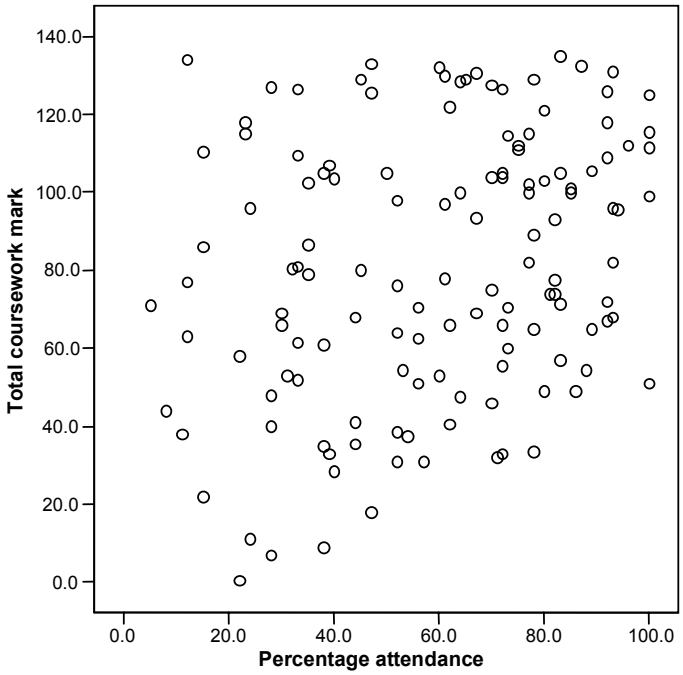

Figure 2: A scatter-plot of percentage attendance vs. total assessment mark

On the basis of the figure, it is clear that at mid-point in the academic year, attendance does not seem to be an indicator of student (assessed) performance. This should not really be surprising when one considers the range of factors (for example, see sections 4.5 and 4.6) that influences the amount of work that a students' do on the module.

4.4 The impact of StudyNet on attendance

To gain some insights into the impact of StudyNet on attendance we asked students to indicate what affect they thought StudyNet had on their attendance. Table 3 provides a summary of the students' responses.

Table 3: Students' perceptions of the impact of StudyNet on attendance

Response	Frequency	%
I don't attend many lectures because I can get the notes from StudyNet	6	6.3
I don't attend many practicals/tutorials because I can get the notes from StudyNet	14	14.6
I attend some teaching sessions but appreciate also having the materials on StudyNet	61	63.5
Regardless of my attendance, I also actively use class discussion on StudyNet	15	15.6
Total		

Only a small percentage of students (6.3% and 14.6%) acknowledge that StudyNet affects their attendance. Many students (63.5%) respond that StudyNet provides additional benefits. Interestingly, however, only a few students (15.6%) seem to take advantage of the most innovative and interactive aspect of StudyNet i.e. the classroom discussion. The results of Table 3 complement the results of Table 5, where the student perception seems to be that lectures, tutorials and practicals (with their associated resources) are more useful than StudyNet resources in general and classroom discussion in particular.

4.5 Obstacles to working on the module

Our main interest is in the possible affects of attendance on student performance. We are conscious that, of course, a wide range of other factors may be affecting student performance. Related to this, student's lack of attendance at lectures, tutorials and practicals could be compensated for by considerable work being conducted in their own time. Conversely, the only time and effort that students are expending on the module may be to attend the lectures, tutorials and practicals. Consequently, to gain some insights into what other activities, commitments etc. are affecting students' engagement with programming, we asked: What influences the amount of work you do on the programming module? Table 4 summarises students' responses to our question.

Table 4: Influences on the amount of work done on the module (ranked)

Category	N	%
The need to work on other modules	70	38
Social life	31	17
Personal commitments	30	16
Paid work commitments	24	13
Whether my friends are also working on programming	11	6
I can't understand programming	9	5
I don't enjoy programming	8	4
Total	183	

Based on the table, the need to work on other modules on the degree programme is the most frequently reported influence on the time and effort being directed to programming. But notice also that, taken together, social life, personal commitments and paid work commitments account for 46% of the responses. There are some complex issues here requiring more attention.

4.6 Students preferred ways of working

In order to gain some insights into how our teaching activities and resources are helping students learn about programming, we asked students the following question: Please rank the importance of the following factors [provided to the students in a table in the questionnaire] in helping your understanding of programming, from 1 (most important) to 9 (least important): Table 5 provides a summary of the students' responses. In the table, the percentage ranking indicates the proportion of students who assigned the activity or resource a ranking of 1, 2 or 3. For example, 63.5% of students indicated that practical exercise sheets were either the most important factor in helping them understand programming (a ranking of 1) or were close to being the most important (a ranking of 2 or 3). Conversely, using the same ranking, only 6.8% of students indicated that StudyNet discussion was the most important factor.

Table 5: Students' perceptions of the helpfulness of various activities and resources

	% ranking highly important
Practical sheets	63.5
Practical classes	60.8

	% ranking highly important
Lecture notes	56.8
Lectures	52.7
Tutorials	52.7
BlueJ book	37.8
BlueJ IDE environment	20.5
Friends	19.2
StudyNet discussion	6.8

Interestingly, it seems that the more traditional activities and resources (i.e. practical exercises, lectures, tutorials, and related materials) rather than the more innovative activities and resources (i.e. BlueJ, StudyNet classroom discussion) are those considered most helpful by the students. In the case of StudyNet classroom discussion, the results reported in Table 5 are particularly surprising as we have evidence that indicates students actively use StudyNet, particularly during coursework's (see section 5).In the questionnaire, students were asked to provide additional comments to explain their highest and lowest rankings. Table 6 provides some qualitative 'depth' to Table 5. The comments show clearly that the students believe that carrying out the practical work for themselves is the most helpful way to learn, but some rely on staffed practical sessions and some prefer to work independently.

Table 6: Examples of student's comments on the helpfulness of particular activities and resources

Comments
"I rarely find the class discussion on StudyNet useful. Being lectured about programming doesn't mean you understand it, that's why the tutorials and practicals are important"
"I seem to learn the most from practical sessions, I do not have an internet connection and so do not use the discussion"
"Practical sessions most important because doing programming and being able to receive help when needed is very useful, discussion not useful because don't often read the comments"
"By having your lecture notes by your side will help you remember and imagine what's going on. Discussion is too public, for stupid questions one-to-one help is better"
"The book provides lots of practicals and information. My friends do not know much about programming"
Basically nothing is more important than having a go at the tasks yourself, so practicals are most important
Already comfortable with programming, so environment helps as I have never had a Java IDE before. Lectures are aimed at complete beginners so they cover (so far) material I already know

5. The use of a discussion forum to support coursework

In Table 3 and Table 5, students report that they do not make much use of StudyNet's classroom discussion. We were surprised by this response, and so collected and analysed information on student's actual usage of classroom discussion. Coursework 3 is an extended piece of coursework where the students had to produce a Java program, which meets a specification within a limited time. The timing of the assignment was such that the work had to be completed during the inter-semester gap; a time when there were no timetabled classes but students could be required to attend assessments in other modules. Table 7 summarises the use of StudyNet classroom discussion before and during the third assignment. The table clearly indicates there has been a dramatic increase in the number of threads and the number of postings to each thread. Interestingly, however, only 50 students have posted any messages (22% of the 232 students) and of those only 36 (16%) students posted more than one message. Of the 50 students who posted entries: 26 (52%) only posted queries, 5 (10%) only posted replies and 19 (38%) posted both queries and replies. This suggests that there is a relatively small group of students actively using StudyNet, although there may be a much greater number who choose to only read the messages.

Table 7: The increased use of StudyNet

	Threads	Postings by students	Posting by staff	Number of students posting
Before assignment 3	30	79	24	
During assignment 3	73	308	40	50 (22%)

6. Demographic information on the students

Many intrinsic and extrinsic factors can affect a student's participation on a degree programme or specific course. Very early in the academic year, we asked students to complete a questionnaire about why they chose to study for the computer science degree, what their interests are in computer science, what their experience is with programming, and other external factors that might constrain their attendance at teaching and learning sessions. 166 students completed part, or all, of the questionnaire. While the exact number of students registered on the degree is known at the time, this number is subject to change in the first couple of weeks of the academic year, as students change their minds and leave, and other students join etc. We estimate between 70% and 85% of students who continued on the degree programme completed the questionnaire.

6.1 Reasons for taking the degree

We presented students with a list of reasons for choosing to study on the degree programme, and we asked students to rank these reasons. The ranking was between 1 (most important reason) and 6 (least important reason) inclusive. Students often did not rank all of the reasons. We have treated these non-rankings as equivalent to a ranking of 6 (i.e. least important reason). Note that as students are asked to rank their reasons, they can only give one reason as the most important and this will affect the percentages within each reason. We found that:

- 50% of students ranked an interest in the subject as their most important reason (ranking of 1) with a further 13% ranking an interest in the subject as the second most important reason (ranking of 2).
- 31% of students ranked career prospects as their most important reason, with a further 40% ranking career prospects as their second reason. As noted above, the ranking of an interest has a knock-on affect on whether students can then rank career prospects as their most important reason. We found that of the 83 students who ranked interest in the subject as their most important, 52 then ranked career prospects as their second most important reason.
- 15% of students ranked (good) salaries as their most important reason for taking the subject, with a further 20% ranking it as their second most important reason.

The results reported above suggest that students have a combination of internal motivators (e.g. interest in the subject) and external motivators (e.g. career and salary prospects) for choosing to study the degree.

6.2 What is interesting about computer science?

We also asked students to indicate (by ranking) what subjects within computer science interested them. We needed to provide some general categories as students may not be aware of particular specialist areas in computer science (e.g. networking, databases, formal systems, compiler design, and even object-orientated technology). Again, students were asked to rank these categories. What is most relevant to the particular course we are describing in this paper is the interest in programming. We found that 17% of students were most interested in the programming aspects of computer science, with a further 17% ranking this as their second most important interest. The low level of interest in programming is a particularly significant result, given that programming is a compulsory element of the degree programme at Level 1 and Level 2. We asked students to indicate their previous experience in programming prior to university. Approximately 28% of students had no experience. The programming language with which students had most experience was VisualBasic, with 16% of students responding that they had "a little" experience, another 35% of students responding that they had "some" experience, and 14% of students responding that they had "a lot" of experience. 13% of students had "a little" experience with Java, with another 7% having "some" or "a lot" of experience. Java was the programming language taught on the programming module.

These results show that, although the students may be motivated to study Computer Science, many do not appreciate programming as integral to the discipline. This may be consequence of the curriculum followed in their prior Information and Communication Technology qualifications.

6.3 Other commitments

In addition to asking students about their internal and external motivation and interest in the subject of computer science, we also asked students about external constraints that might affect their ability to attend and study. Where there are constraints, technologies like StudyNet may be able to provide support. We focused on two constraints: paid work and personal commitments. We found that 88% of the students who

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responded said that they either had or needed a job. The median average number of hours worked or expected to work was about 12.5 hours. 50% of the students who wanted or needed a job expected to do paid work for between 10 and 16 hours per week, with a further 25% of the students expecting to do paid work for between 16 and 25 hours. Such paid work represents a considerable commitment, particularly where students are expected (ideally) to be studying between 30 and 40 hours a week. 26% of students who responded indicated that they had major personal commitments, but for ethical reasons we did not ask students to provide details on those commitments.

7. Discussion

One of the surprising results of our investigation so far is the mismatch between reported perceptions and corroborating evidence. Tutors often regard attendance at traditional class contact sessions as a key factor in a student's success. Our survey, like that completed by Burd and Hodgson (2005) showed that there is a perception amongst some tutors that the availability of teaching resources on MLEs has a detrimental impact on student attendance. However, as in their study, evidence to support the view that the presence of a MLE does impact on student attendance is inconclusive. Our survey shows that students themselves do not regard the availability of teaching resources on the MLE as a factor in their non-attendance. However, our investigations also show that students' perception of the extent of their (fairly high) attendance is not supported by other evidence. There may be several reasons for this: students completing the survey may wish to present themselves in a better light, they may not be able to isolate their attendance on this course from their general attendance or be unable to separate out the different modes of attendance, or their perception of how well they are doing on the course may colour their perception of how well they attend.

In addition, factors other than the MLE such as timetabling may be important in determining the level of student attendance. Pearce (2005) analysed absenteeism among first year students and found that the main self-reported reasons were illness, lectures too late or early in the day, under the influence of drink or drugs, and having only one lecture in the day. Such factors may not only influence student attendance but also the amount of work done for the course and hence their success on the course. An internal survey of all Computer Science students at the University of Hertfordshire found that the biggest single contributer to absence from classes was travel/timetable restrictions (Baillie 2006). Also related to this factor, our complementary survey (see section 6.3) found that 88% of the students reported the need to work and 26% that they had major personal commitments. At this midpoint in our investigation, in contrast to the study by Colby (2004) and Burd and Hodgson (2005) another surprising result is that we found no correlation between attainment and attendance. Our survey shows that there are complex factors, which affect the amount of work done on the course. At a time when personal commitments and the need to work are making increasing demands on student time and making it harder to justify travelling to attend classes, the availability of web-based material may compensate for lack of student attendance. A study by Jefferies et al. (2004) found that 50% of students felt that StudyNet had improved the way they learn, and this is corroborated by our survey.

In the survey of student's preferred ways of working there is still extensive student support for traditional modes of delivery. It is not surprising that practical exercises are rated very highly, since the aim of the course is to develop practical skills and the practical exercises both provide opportunities to implement concepts and allow students to gauge their progress. However, the high ranking given to other traditional modes of delivery such as lectures, practicals and tutorials is surprising, especially when put alongside the student's lack of attendance at these events. The use of the discussion forum increased considerably during an assessment with many sensible postings and responses from students. Whereas in the past a student would talk to a limited number of friends, the discussion allowed the whole cohort access to queries and replies. Although we could not find evidence to support the view that the MLE was causing a lack of attendance, there is some evidence to show that the MLE is changing the way both students and tutors work, even though this may not be supported by their reported perceptions. Attendance at timetabled class sessions may not be essential for motivated, capable students or if students can get the same quality of support in other ways. Many of the students in our group expressed opinions such as “I would rather work on my own at home without distractions” and again this is not surprising on a course where a student has to practice to develop their own skills especially since the programming environment itself provides valuable feedback.

However, lack of attendance can be problematic for those students who may need more intensive and personalised support. Lack of attendance by some of the students in a group can create

problems for group identity; as attendance decreases so does the inclination for others to turn up. Some students need the discipline of regular attendance to keep focused on the work, and to gain access to help and feedback from tutors. Good attendance can also be a characteristic of a motivated student; Catley (2005) found that the best attendees were also those most likely to complete the online quizzes. Our intention, once we have obtained the final results for this cohort of students is to cross correlates these against attendance and use of the MLE to see if any patterns emerge. One further factor, which needs to be considered, is not just whether an MLE is available on a course but also how it is used. A study of lecturers' reactions to StudyNet carried out in 2002/2003 by Thornton et al. (2004) found a number of 'new innovators' using MLEs in new and innovative ways and a majority of compliant adopters who could see the advantage of the MLE as an information source and as an administrative tool. The course which is the subject of this study is probably somewhere near the mid point of this scale. Currently, it tries to blend traditional modes with the opportunities afforded by technology, while not yet fully exploiting that technology. Given a different pattern of MLE usage and a course, which is different in nature, it may be that the effects of an MLE on attendance and crucially on student attainment may also be different.

8. Conclusions

Low student attendance cannot be attributed to the availability of learning resources on a Managed Learning Environment. It is not a new phenomenon for students to skip classes, and increasingly there are other demands on their time. The facility to access learning resources and so work in their own time and place is valued by students and may compensate for non-attendance. We did not find a correlation between attendance and course-work marks at the mid-point in the year. We did find that, while appreciating the facilities offered by an MLE, both staff and students value traditional modes of delivery.

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