Does Supporting Equated Learning for Online and On-campus Postgraduate Students by Using a VLE Increase Tutor Workload?

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Abstract

This study assesses the effects of study mode on student achievement, student satisfaction and staff workload in three modes of study: online learning, on-campus learning and a blended mix of both online and on-campus tutorials. Statistical analysis revealed no significant differences in grades (summative marks) between online and on-campus groups. However, online students required more tutor assistance than on-campus students. Online provision increased tutor time, dependent on group size and study mode. Similar to other research these findings indicate that students are not disadvantaged by the isolation of online learning, and/or that tutors' workload increases to create parity in summative grade scores. This ongoing evaluation suggests that traditional on-campus views of calculating tutor workload may require rethinking to acknowledge online tutor activity.

Introduction

The University of the West of Scotland has been offering flexible postgraduate programmes in Alcohol and Drugs Studies online since 1999. Although the University has been using Blackboard as its Virtual Learning Environment (VLE) since the late1990s, this paper will not be a critique of the product. It will present generic issues related to online programme delivery as it compares to traditional on-campus delivery and related workload allocation models used by the University. The explicit focus of this continuing longitudinal study from 2002 to 2006 was on student achievement, student satisfaction and staff workload in three student cohorts: studying online, on campus and a blended mix of both modes.

The online study groups have exactly the same module syllabus as their on-campus counterparts. This means that they are taught on the same traditional 15-week semester as the on-campus version and have the same learning materials, assignments, projects, and tests. Most importantly, as grades scores were compared by study mode, the online and on-campus modes of study had the same learning outcomes, the same teaching and learning materials, and live interactive lectures using the VLE as a central hub. The paper is divided into a further 4 sections. The subsequent section outlines the three modes of learning that form the basis of this study, leading to a section on the methodology of this evaluation followed by an analysis of the results. The paper concludes with a reflection on the results and directions for future research.

Comparing Distance and On-campus Learning

Online learning has now been transformed from a minor type of education to a commonly accepted and increasingly popular alternative to traditional face-to-face on-campus learning (Gunawardena & McIsaac, 2004). The growth and widespread use of the Internet provides institutions with the ability to expand and deliver courses online to meet an ever-increasing need for students to gain qualifications. There is evidence that institutions are adapting to meet this demand (Bjorner 1993; Shaw & Young, 2003; Thormann 1999; and Velsmid, 1997). Renner (1994) asserts that teachers' tasks are to be accepting, supportive, and empathetic; to establish a pattern of communication that creates a climate of trust and safety; and to make available a wide range of resources and learning techniques. The activity required to meet the primary tasks of teachers identified by Renner (1994) and thus to meet the needs of students comes at a cost. Harasim, Hiltz, Teles, and Turoff (1995) found that the volume of communications increased markedly when students were online rather than in the classroom, which made distance learning more time consuming than classroom instruction; this was also found by Thormann (1999) and Shaw and Young (2003).

While learning styles may be significantly different between online and on-campus learners (Diaz & Cartnal, 1999), many studies concluded that there were no significant differences in grade scores and achievement. One of the most influential of these was the annotated bibliography by Russell (1999) that reviewed 355 studies on distance education produced between 1928 and 1998. Some of the early studies examined correspondence courses, but most compared instruction over videotape, interactive video, or satellite with on-campus, in-person study programmes. The comparisons were based on test scores, grades, or performance measures unique to the study and on learner satisfaction. However, only 40 of the 355 studies specifically included computer-based instruction, and the compilation was completed before the Internet became so pervasive (Connolly, MacArthur, Stansfield, & McLellan, 2006).

Now that the use of the Internet has become commonplace, comparing online and on-campus education in general terms tends to find few significant differences in outcomes and satisfaction ratings between on-campus and off-campus learners, (Duffy, Gilbert, Kennedy, & Kwon, 2002; Edwards, Hugo, Gragg, & Peterson, 1999). A study by Kessler (2007) using ANOVA and t-tests compared 176 students studying online and on-campus found no significant differences in grade scores between study modes. While some meta-analysis studies, principally the analysis by Phipps and Merisotis (1999), concluded there was no significant difference, they did find a significant variation in the outcomes of distance education and face-to-face education. For example, Zhao, Lei, Yan, and Tan (2005) found that low instructor involvement led to less positive outcomes for distance education but more positive outcomes as instructor involvement increased. Connolly et al. (2005) found that online students performed better than on-campus students in their study. However, a major criticism of any evaluation research in this area is that this type of study tends to focus on one small part of an entire study programme (Phipps & Merisotis, 1999).

Despite these shortcomings of distance education, advantages to both students and institutions associated with this mode of learning are recognized (Mathews, 1999). For the student, the increased flexibility widens and eases access to study, and for the institution, distance learning provides an opportunity to increase student numbers without necessarily having to invest in expensive real estate. Gagne and Sheperd (2001) report that there are disadvantages to flexible learning insofar that online students will often incur higher fees than on-campus students and the institution may have higher start up costs in terms of providing a virtual learning environment (VLE), and additional tutor support. While comparative studies indicate few significant differences in grade outcomes and student satisfaction rating between on-campus and online student cohorts, these studies do describe issues that must be addressed in online programme delivery. Ryan (2000) has observed that if student perceptions as measured by a questionnaire are similar between on- and off-campus students, then it may be assumed that off-campus learning is as effective as on-campus learning. Shaw and Young (2003) suggest that parity between online and on-campus education is achieved if the lecturer spends significantly longer time communicating, explaining and teaching online cohorts. They conclude that "the similarity in levels of student learning within two venues (on and off campus) has been achieved at a considerable cost to instructors in amounts of extra time required to develop and deliver the online coursework" (p. 1).

The changing and diverse environment in which distance education is practiced has inhibited the development of a single theory upon which to base practice and research. A variety of theories have been proposed to describe traditional distance education. The debate on whether online learning can adequately compare to on-campus learning is discussed by Simonson, Schlosser, and Hanson (1999) in their discussion of what has become known as Equivalency Theory. The theory consists of the concepts of equivalency, learning experiences, appropriate application, students, and outcomes. Central to this theoretical approach is the concept of equivalency in the learning experience between traditional forms of learning on campus, and the new emerging forms of off campus learning at a distance. Simonson et al. argue that on-campus and distance learners have different learning environments, and that the responsibility is the tutor's to design learning events that provide experiences with equal value for learners.

Introduction to the Evaluation

To create as best as could be achieved a sense of equivalency as described by Simonson et al. (1999), the VLE Blackboard was deemed an appropriate application as it could be used as a central hub for all students to meet and interact using the asynchronous discussion forms. Distance learners could also access interactive lectures using microphones and headsets with their tutor in synchronous live lectures using 'e-pop'.[1] All students had the same interactive written support material, posted to them and also

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[1] E-pop is a web based technology from 'Wired'. It is a live interactive web broadcast where online students can see and hear the lecture that was delivered on campus in a power point format. This is also saved as a flash file resource for viewing at any time.

available in an online format. These written materials consisting of five units had discussion sections that corresponded to the discussion forum activity in the VLE. Each unit also had questions that had to be answered before moving on to the next subsection within each unit. While books are important to all students regardless of study mode, the programme under discussion relies heavily on electronic journals to supplement reading and to create a comparable learning experience for both online and on campus student learners. The resources of the on-campus library are readily available to the distance learners electronically using their ATHENS password. These research papers are accessed in either PDF or Word file formats which can be printed out or read on screen.

The objectives of this evaluation were to assess the effects of study mode on student achievement in terms of summative grades for a postgraduate module (part of a postgraduate award in Alcohol and Drug Studies at the University of the West of Scotland), and to compare the different study modes in terms of student satisfaction and staff workload. Statistical analysis using 1 way ANOVA to compare the three groups by year, revealed no significant differences in grades (summative marks) between online and on-campus groups. Three modes of study were compared:

- Group 1: on-campus study with access to VLE (full and part time)
- Group 2: online study via VLE (part time only)
- Group 3: online study via VLE with face-to-face tutorial (part time only)

Groups 1 and 3 are supported both online and face to face (widely known as "blended learning" or "integrated learning" — for the purposes of this study, this mode will be referred to as blended learning). Group 2 is supported wholly online with no on-campus or direct traditional face-to-face tutor contact. All students in all groups are expected to access the VLE actively and to engage in synchronous and asynchronous discussions with tutor and other student learners. Debate in the VLE and in the classroom increases their knowledge and critical analysis of research in this highly contested field. All students download, complete and submit all assessments via the VLE. These include two written assessments: one mid-term assessment of 1500 words[2] and one end-of-term assessment of 3500 words. The assessments tested the ability of the postgraduate students to critically analyze, compare, contrast, and synthesize the broad theoretical frameworks within models explaining addiction. The on-campus students were able to have face-to-face discussion to help them construct an adequate assessment. The online students required a criterion document to be uploaded to the VLE for discussion, and individual e-mails and telephone conversations attempted to create a comparable substitute for the face-to-face on-campus experience between tutor and student. No economies of scale were to be realized in this activity, and communications between tutor and distance learning student increased markedly in the semester during these assessments.

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[2] This was changed to a secure online multiple choice questionnaire delivered via the Question mark Perception software.

Student Support

The Alcohol and Drugs Studies postgraduate programme is a flexible programme with all support being given over three modes of study. It incorporates the following support elements:

- printed materials written by University Lecturers and mailed to students (also available in the VLE as a rich text format document);
- online discussion, both synchronous and asynchronous, to debate the main issues raised in the printed material and in practice;
- links to relevant further online resources such as electronic journals and relevant web sites;
- individual student guidance given online and on campus;
- written formative feedback on assessable work upload to the VLE; and
- live interactive web-based lectures using e-pop system, recorded and saved as a learning resource.

Individual tutoring was available on request to any student. Students could contact the tutor via e-mail, telephone or if on campus at lecture/tutorials or simply by calling in to the office. Learning Support also made appointments for students with the tutor. All e-mail messages were answered in less than 48 hours except in exceptional circumstances.

In general in modules studied as part of the postgraduate programme tutors develop learning resources, deliver lectures/seminars/tutorials to on-campus students, and provide comparable online communication and learning opportunities for the online groups.[3] Tutors also evaluate assessments and provide formative and summative feedback on student contributions via the VLE. As significant changes occurred in the way study was offered from 2002 in terms of increasing numbers of part-time on-campus and part-time distance learning students, evaluating the new flexible delivery of the postgraduate programmes was considered important. The evaluation sought to examine the impact or relationship between study mode on grades and student satisfaction, and staff workload, in the light of other evaluations of online and on-campus study. However, this evaluation reflects on the experience of one tutor in one module.

Methods

The module selected for investigation was "Understanding Drugs, Alcohol and Consequences" (part of a postgraduate programme in Alcohol and Drugs Studies). This module is an integral part of the postgraduate Masters' programme, and must be studied by all students. As Table 1 shows blended learning (online learning with face-to-face tutorials) was not offered until 2002. On average 24 full time on-campus students awarded a full study and support grant from the Student Awards Agency for Scotland (SAAS) each year. They study only on campus; all other students study on a part-time basis, either on campus or online by distance learning.

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[3] PowerPoint presentations with audio commentary are uploaded to the VLE. Real-time lectures are presented online using the web-based learning resource e-pop.

Table 1: Enrolment in Understanding Drugs, Alcohol and Consequences Module
2001–2006

	2001–02	2002–03	2003–04	2004–05	2005–06
Group 1: on- campus	35	34	47	24	32
Group 2 :online	32	32	19	32	34
Group 3: blended	0	10	10	8	4
Total	67	76	76	64	70

The evaluation compared student performance and satisfaction on the three separate
modes of module delivery. The grades (summative marks) for each student at the
completion of the module were entered into SPSS. Students who failed to complete the
assessment were excluded from the analysis. In order to discover if grades were related to
study mode, average grades were calculated for each mode of learning (or group) and
over the four years of this evaluation. To test for any significant differences between
study groups 1 way ANOVA and t-tests were used. Students studying this module in
2004–05 and 2005–06 were asked to complete the standard university feedback
questionnaire either on campus[4] or the online version available in the VLE. Ratings of
satisfaction on whether needs were met were compared. Finally the tutor workload for the
three methods of module delivery was also compared. Tutor workload is generated by on-
campus activity; synchronous (real time lectures via the VLE); e-mail and telephone
communication; asynchronous communication (via the discussion forums); marking and
guiding students in completing assessments; and finally administration duties for all of
this activity. Records were kept by the author, and averages were used to calculate time
on each activity for each study mode.

Analysis of Results

Student Grades

The grades of each student at completion of the module were made available on the VLE
grade book. The grades for each student were then entered into a table and students were
grouped by study mode. The mean score by study modes were calculated, and the results
were analyzed using SPSS. Table 2 highlights the Mean grades per year at completion of
one module.

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[4] This is a paper format for on-campus students only.

Table 2: Mean Grades per Year at Completion of One Module

	2001–02	2002–03	2003–04	2004–05
Group 1: on campus	-	56.26 (09.13)	65.30 (6.30)	64.03 (7.42)
Group 2: online	-	54.33 (10.53)	65.10 (3.72)	63.76 (5.55)
Group 3: online with tutorial support	-	55.85 (10.55)	67.40 (5.22)	64.00 (7.34)
Mean (all groups)	56.87	55.30	65.93	63.93

These grades of each group were then input into SPSS. Statistical analysis using 1 way ANOVA of students by year and by mode of delivery was conducted for the three study modes by year found no statistically significant differences. In 2003 there were no significant differences between groups (0.785). Statistical analysis revealed no significant differences between groups in 2004 (0.729), in 2005 (0.993). What was significant was the between-subjects test in 2003 between the years 2004 and 2005, at (0.00). Table 3 indicates the ANOVA results.

Table 3: Results using ANOVA Test of Between-Subjects Effects 2003–2005

Dependent Variable: grade scores

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	1605.499(a)	2	802.749	12.861	.000
Intercept	351123.033	1	351123.033	5625.512	.000
GROUP	1605.499	2	802.749	12.861	.000
Error	5679.874	91	62.416		
Total	359871.000	94			
Corrected Total	7285.372	93			

R Squared = .220 (Adjusted R Squared = .203)

The author therefore decided to conduct T-tests to compare online and on-campus groups. T-tests indicated no statistically significant differences between groups for each year and between years with a 95% confidence interval of the difference between the means. Thus what had appeared statistically significant in the ANOVA test between the three groups was in fact a global overall increase in grades from 2003. This can be seen clearly in Table 2 where in 2002 –03 grades average at 55.30, while in the next two years they average at 65.93 and 63.93, where the increases in grades are common in all study modes. These increased summative scores in 2003 and again in 2004 across all groups were explained by the changes in how students were assessed. In 2003 a 20-question multiple-choice online test replaced the 1500-word essay. This mode of assessment was chosen for many reasons, the most important of which was the time taken to mark and upload

formative feedback to students on their mid-term 1500-word paper. Despite changes in how students were assessed, no significant differences occurred between online and on-campus learner grades scores over the length of this evaluation.

Student Satisfaction

Student satisfaction questionnaires designed by the University gather data useful to the learning and teaching committees. Quantitative data from the online and the on-campus version of the questionnaire were summarised. What was interesting from this study is that only 6% of on-campus students indicated that they required help from tutors, with 33% strongly disagreeing with this statement; perhaps this indicates that face-to-face questions by on-campus students can be quickly dealt with in the on campus lecture theatre. By contrast, 76% of online students indicated that they required help from their tutor. These findings (consistent over 2004 and 2005) support the notion that online students require significant more time support from their tutor compared with on-campus students.

However students' comments indicate that this support was often about late registration and accessing the VLE than about their learning per se. Part-time online students particularly found enrolling and registering difficult as the University were enrolled these part-time students by post. Registration by post caused some delay in accessing the VLE and caused these part-time distance learning students some difficulty, as expressed in the comments recorded in the online questionnaire comments.

Nevertheless, time spent by the tutor in communication with online students indicates that evening activity responding to e-mails, online activity responding to the discussion forums, and responding to e-mails from distance learners all indicate that online students did affect the work load of the tutor.

Staff Workload

Table 4 highlights what is available to students in terms of support and activity for each study mode. As can be seen, all have access to the written materials, and all have access to the teaching material uploaded to the VLE.[5] Only Group 1 attends on-campus lectures, and only Group 3 attends off-campus face to face tutorials with their tutor. All groups access the VLE, and online learners can take part in synchronous (real time) multi media lectures using the e-pop system. These are recorded and uploaded to the VLE as a learning resource and can be accessed at any time by any student.

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[5] These can be PDF files, texts, Web links and audio visual materials to aid study of this particular module.

Table 4: Student Support and Activity by Study Mode 2002–2006

	Access to distance learning written materials	Attends on-campus lectures	Attends off-campus face-to-face tutorials	Access to on-campus teaching materials in VLE	Access to Web chat and discussion boards
Group1: on campus	Yes	Yes	No	Yes	Yes
Group 2: online	Yes	No	No	Yes	Yes
Group 3: online with tutorial support	Yes	No	Yes	Yes	Yes

Staff Workload: The University Workload Allocation Model

The University workload allocation model (WAM) is used to calculate the staff student ratios for each programme, to ensure fairness in resource allocation within and between faculties. It is calculated by dividing the number of students on each module by 15-week semesters with number of hours per week in face-to-face lecturing on campus. Additional hours for pastoral care and marking and discussion of assessment are also calculated.

On-campus activity includes both the average time per week spent directly teaching into this module and the number of hours spent with students who require talking face to face about some academic related issue. Requests for meetings by on-campus students can come via telephone, face to face, and via the VLE through e-mail. Online activity can be in real time (synchronous) via web conferences and real time lectures and at any time (asynchronous) using the discussion forums and via e-mail. Table 5 highlights that the traditional WAM does not take into account the online activity and electronic communication via e-mail, discussion boards, online conferencing, and real-time lectures delivered via the VLE.

Table 5: Student Support and Activity by Study Mode 2002–2006

	Access to distance learning written materials	Attends on campus lectures	Attends off campus tutorials	Access to on campus teaching materials in VLE	Access to Web chat and discussion boards	Total average contact time per week	Total contact using university WAM
Group 1 on campus	Yes	Yes	No	Yes	Yes	4 hours	4.5 hours
Group 2 online	Yes	No	No	Yes	Yes	5.5 hours	2.8 hours
Group 3 blended	Yes	No	Yes	Yes	Yes	6.5 hours	Less than 1 hour

The on-campus cohort (Group 1) has an average of 1.5 hours direct teaching contact and 4 hours when drop in and informal discussions occur outside of scheduled teaching are included. Using the WAM, this is calculated to 4.5 hours per week. The online cohort (Group 2) adds an average contact time of 1 hour (includes all e-mail and discussion forum contact and 1 hour per week in online teaching using e-pop) totalling 5.5 hours. When adding the additional 2-day face-to-face tutorials for Group 3 (includes 1 hour per week direct teaching accounting for 2 days face-to-face tutorials and seminars) the total for this module is pushed to 6.5 hours of average contact. This is activity as yet unrecognised by the University WAM.

On–campus activity. On-campus activity relates to the number of hours per week of directly teaching in this module. It also relates to the number of hours spent on average with students who require talking face to face about some academic related issue. Requests for meeting by on-campus students can come via telephone, face to face, and via the VLE through e-mail.

Online activity. Live synchronous lectures are scheduled every two weeks and last for at least one hour. It is common for six or seven students to be online and only one or two will lurk and watch without taking an active part; however the tutor can, if appropriate, bring them into the discussion. Because each online lecture session is themed, i.e. covering one of the broad themes from each of the units in the module, interaction debate and critical analysis of the models and theories and main points of the module are often addressed. This synchronous activity can be saved and can be accessed by anyone — serving as a learning resource. In addition to the hour spent in online live activity, this direct contact can also generate a lot of e-mails and discussion board threads, which also add to the additional workload for tutors. Weekend and evening work is now essential to support students, and to maintain a presence for the online students who in much of the research tend to report feeling isolated.

Asynchronous contact via the discussion board. In general around 15 forums are created in the module under investigation and students can contribute as they wish. The module has 5 learning units, which generate on average at least two questions per unit

from each student, which are uploaded to the VLE discussion boards. Students must be motivated to maintain contact with their tutor and other students — and this means that some do not engage. Some are quite happy to work online in their own time, and may not need to contact the tutor or other students. While only a small number actively participate on a regular basis (around 10–20), this style of teaching does require constant monitoring. On average at least 25% of the student group participates actively in the discussion board activity. This works out to approximately 18 responses which have to be monitored and some replied to. As each takes approximately 10 minutes to read, plan and respond to (with further questions if required), this amounts to approximately 3 hours per week or 42 hours per semester.

E-mail exchanges. Before the module begins the main themes in communication are
* the VLE,
* written learning materials,
* finance,
* feneral administration, and
* late registration.

For example there are on average around 70 students per semester and if each one generates on average 1 e-mail every 2 weeks, the tutor will have to respond to (at least) 490 mails per semester. This does not include the induction and orientation week. At 10 minutes on average to read, plan and respond, that works out at 81.7 hours over a semester, just for e-mail alone. On average this is 5.8 hours per week on e-mail from students on ONE module.[7] This average contact accounts for spikes of increased mail contact during the induction week and before each of the two assessments when e-mail exchanges increase dramatically.

Tutors experience. Table 5 indicates that the on-campus cohort (group 1) have an average of 1.5 hours direct teaching contact, not including drop in and informal discussions outside of scheduled teaching hours. If on average 30 minutes per day is taken up with discussing the on campus student issues, this adds a further 2.5 hours per week. This produces a weekly average of 4 hours.

Table 5 also highlights that the online cohort (group 2) has an average contact time of 5.5 hours (includes all e-mail and discussion forum contact and 1 hour per week in virtual synchronous teaching).

The blended cohort (group 3) average contact time was 6.5 hours (includes 1 hour per week direct teaching (accounting for 2 days face-to-face tutorials and seminars). This increased teaching input and contact with online and blended learning students is thought to be essential in order to balance the regular contact that on-campus students experience. Obviously this has a workload implication. The attempt to create parity and treat the

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[7] Thus the calculation is (35 e-mails x 14 weeks x 10 minutes to read and respond = 4900 minutes or 81.7 hours per semester, or 5.8 hours per week.

students as one cohort does have a tangible impact on tutor workload. This activity is to date not recognised by traditional on campus workload allocation models.

Discussion and Conclusions

Renner (1994) asserted that the teacher's tasks are to be accepting and establish trust and rapport; this, however, does not happen without tutor activity. Similar to what Harasim, Hiltz, Teles and Turoff (1995) indicate, the volume of communications from online cohorts (groups 2 and 3) did have an impact on tutor activity and workload. Although no significant differences were found in this ongoing evaluation, this may be due to the tutor attempting to create a comparable learning experience between the online and on campus student cohorts. Zhao, Lei, Yan and Tan (2005) found a correlation between tutor activity and grade scores. This is supported by the research conducted by Shaw and Young (2003) that found tutor activity tends to increase if equivalency is to be achieved. However, as attrition can be high among part-time learners the small numbers in the online groups compared to the on-campus group may also influence the results.

The introduction of a more flexible approach to student support has indeed created more study choices for students but these choices are not without cost to the staff and institution. For example, while the increased flexibility of teaching delivery may have reduced face-to-face teaching on campus it has certainly increased is the "face to screen" time on the VLE. In comparison with on-campus learning, the online students' experience of learning is more time intensive, and as a result this increased activity was recorded by the tutor in terms of workload activity which appeared to increase between on campus and online study modes. No significant differences in grades scores by study mode implies that whatever mode of study, student grades do not differ significantly between study modes. This study, similar to others comparing online with on-campus study modes, has focused on only one module from a range of modules in our postgraduate programmes. Whether this is typical of the programme in its entirety and if these findings would be replicated by other tutors and research is unclear.

The flexible nature of this type of study programme has widened access, e.g. we have increased our number of part-time students who work full time. An increase in student numbers though does not necessarily mean an increase in the staff-to-student ratio (SSR) — the formula recognised by the University to allocate resources. Consequently Schools within the University must have a large staff-to-student ratio to demonstrate need for additional resources. Current workload allocation models in the University/School tend to be driven by a measure of traditional modes of teaching — that is contact hours for lectures and seminars — and do not take into full account wider support of student learning, such as online support. In moving from traditional delivery modes to greater use of online modes, workloads can increase significantly but not be recognised by traditional workload models. An SSR model is theoretically independent on the mode of learning adopted, since it is a measure of the ratio of staff-to-student numbers. However, the assumption that online delivery allows higher SSR's neglects to take account of the increased demands on staff from online modes and assumes that online delivery replaces

all or a significant part of face-to-face modes. The present ongoing evaluation suggests a far more complex relationship between SSR's and different delivery modes.

 In summary while flexible teaching and delivery has increased the numbers of part-time and distance learning students, this has resulted in a marked increase in tutor time allocated to online contact with these students. Any planned increased in student numbers will necessitate a dedicated tutor to maintain and support online students — and a rethink of the traditional WAM to account for online activity.

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