Critical evidence of students' unreliability when using Lectopia in tertiary second/foreign language education environments

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Lectopia's widespread acceptance in language education environments at a tertiary level in Australia tends to disregard or overlook some emerging consequences of its use. The theory behind provision of Lectopia is that students can use it access recorded- lectures for purposes of revision, and to access study elements that they may have missed in the original face-to-face lectures. This can be translated into an ideal situation in which the number of absentees at a lecture should be equal to (or less than) the number accessing that lecture via Lectopia. Is this really so in practice? Using the rationale that if the number of students accessing Lectopia is equal to the number of absentees, then the difference between these two numbers would be zero, a one-sample t-test was used to compare the actual differences between these values.

Introduction

In recent years there has been great interest in - and ongoing development of - learners' autonomy in educational institutions. Flexible learning approaches, also known as open learning or distance education, have utilised the potential of information technology to lead a shift from conventional face-to-face lessons to more mobile and virtual learning styles. Consequently, many tertiary education institutions in Australia have initiated intra-campus and external modes of teaching, and have moved towards the enhancement of IT-assisted lessons. The current trend for low enrolment levels in tertiary education has also contributed to the need for universities to accelerate development in instructional design, so as to better cater for the diversity of student learning styles. As a consequence, students are granted the benefit of having their specific learning style addressed, and are able to select from a range of learning options, rather than being automatically included in the traditional 'one size fits all' approach. Thus universities have fostered the development of widespread customised IT-supported education, with a tendency towards increased standardisation (Webster & Murphy, 2008) in line with the philosophies of learner autonomy and self-directed learning (Hurd, 2005; Peters, 1993).

Lectopia is fully automated system for recording lectures and making them available to students without the need for special viewing software. Thus students using Lectopia can access lecture recordings over the internet at their convenience. All this makes Lectopia a highly suitable medium for recording information provided in a lecture, and the system is emerging as a legitimate mode for content delivery in the higher education environment. According to Curtin iLecture, an online content delivery system using Lectopia, almost 14,000 sessions have been recorded by this media so far, and these sessions had been accessed almost 400,000 times at the time of publication (Curtin iLecture).

Lectopia is intended primarily as an auxiliary learning aid, not as a total replacement for faceto-face lectures (Curtin iLectures; McElroy & Blount, 2006; Sheely, 2006). If actual use of Lectopia matches this expectation, then the number of absentees in a lecture should be equal to, or less than, the numbers of students accessing the lecture recorded in Lectopia. Although this simple theory holds great promise, it also raises a critical question as to whether students really do show such self-direction for the benefit of their own learning.

There have been several studies exploring the further development and expansion of Lectopia. For example, Williams' (2006) study focused on the benefits and challenges of Lectopia as they apply to disabled students, while Chang (2007) examined Lectopia from the lecturer's perspective. Williams and Fardon (2007) studied the relationship between students' access to Lectopia and lecture attendance, but did so using a voluntary, retrospective and self-assessed survey of university students. They determined that students were more frequently absent from lectures when Lectopia was available, even though Lectopia was not necessarily accessed.

Relying on students to voluntarily and retrospectively self-assess their attendance of lectures and their use of Lectopia is not necessarily an accurate or reliable form of data collection for quantitative assessment. In fact, there has been little quantitative attention paid to whether students do in fact use Lectopia in the intended way. By determining the exact frequency with which students are absent from lectures and/or access Lectopia each week, this paper aims to address this gap, examining the hypothesis that Lectopia is not always appropriately accessed and/or utilised by students in the second/foreign language education environment at the tertiary level. (In this paper, the lexical item Lectopia is mainly employed, but iLecture is also introduced interchangeably, according to how the terminology was used in the literature being discussed.)

Characteristics of Lectopia

Lectopia is one of a multitude of computer-mediated educational software developments and won an Australian Award for University Teaching in 2002 (Fardon & Henderson, 2003). It utilises automated digital software and was originally developed in 1998 (McElroy & Blount, 2006). It was introduced into the University of Western Australia in 1999 (Williams, 2006), with the aim of providing students with 24/7 online access to recorded lectures at their convenience through 'telepresence' (Coaldrake, 2002, cited in McElroy & Blount, 2006). This automated lecture recording system has since enhanced offshore and off-campus education and has become widely accepted at tertiary education institutions in Australia and internationally (Brabazon, 2007).

In the literature, Lectopia is widely acknowledged as catering to large numbers of students (Biggs, 2003; Bligh, 2000; Curtin iLectures; Laurillard, 1993, cited in Williams, 2006). It can also provide a constructive solution to common issues such as students' timetable clashes, work and/or family commitments, and geographical restrictions (Fardon & Henderson, 2003; Webster & Murphy, 2008).

The results of the Lectopia Student Survey at the University of Tasmania (Semester 1, 2009), for example, showed that adopting Lectopia was beneficial to students in several ways: allowing them to pick up on elements missed in class (57%), revise for examinations (56%), revisit complex ideas and concepts (53%), concentrate on listening rather than note-taking in lectures (30%), pick up announcements and examination hints (34%), take more

comprehensive notes when reviewing lectures (40%), work through the material at their own pace (especially for students who are not native English speakers) (5%), and improve accessibility for students with disabilities or medical conditions (4%).

Chang's (2007) research showed that use of Lectopia has possible benefits, including: (1) improved equity of access, especially in cases of illness, disability, and family or work commitments, (2) more opportunities for study revision, and (3) capacity to listen to multiple lecture streams in order to compare and contrast content. Thus students can use Lectopia as a study support tool for the revision and review of core materials first introduced in regularly scheduled lectures (Chang, 2007).

For students with physical disabilities who find it difficult to attend lectures, Lectopia is an essential tool and plays a pivotal role in enabling education (Williams, 2006). At the same time, it can be used as a tool for tutors to check the components and elements introduced in previous lectures, allowing for better bridging with tutorial sessions and the production of streamlined synergetic teaching strategies (McElroy & Blount, 2006).

However, criticisms have also arisen in the debate surrounding Lectopia. For example, not all students are able to access a computer at home (Randolph & Thompson, 2003) or are savvy with educational technology (McElroy & Blount, 2006). Further, a compelling argument against Lectopia is that its virtual delivery mode can bring about apathy that discourages students from attending face-to-face lectures, thus reducing interpersonal communication and interaction between lecturer and students (Chang, 2007; McNeill et al. 2007). Critics of Lectopia suggest that it preserves a lecturer-directed rather than student-centred mode of education.

Also, as there is increasing expectation from students as to the quality of Lectopia presentations, greater pressure is put upon lecturers to spend extra time tailoring materials for Lectopia, rather than treating the recording of their lectures as a simple and standardised teaching component (Chang, 2007; McElroy & Blount, 2006). Already, many lecturers are making conscious and subconscious efforts to transform their teaching behaviours and approaches to better suit virtual delivery. This requires extra effort on the lecturer's behalf, diverting attention from crucial face-to-face time with students.

Research question

Use of Lectopia by staff and students has continued to increase. Curtin University is now providing online access to up to 200 hours of lectures and seminars each week, and the number of lecture recordings accessed by students has increased by over 330% from 45,000 in 2006 to 150,000 in 2007 (Curtin iLectures). This dramatic increase across the university has raised the question as to whether Lectopia has been fully utilised by students enrolled the second/foreign language units of which the researcher is in charge.

A high priority of Lectopia delivery is to increase the accessibility of lectures for a diverse range of students (William, 2006). However, access to lectures that students have not attended is perhaps a more paramount objective than the voluntary and optional review of lectures that students have attended. This research concentrates on the links between students' attendance, especially for first year students, and the frequency of their access to Lectopia.

Research method

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Part of this research project depended on keeping attendance records, which is not a common practice in the tertiary environment. However, in the researcher's own classes, attendance was regularly taken and thus students were accustomed to this practice. For this reason, the researcher decided to use his own classes for data collection. (The researcher was unit coordinator of the following target units.)

The classes used for this research comprised four Japanese units offered during Semester 2 in 2008 and Semester 1 in 2009 at Curtin University. (It was not possible to conduct this research from the beginning of 2008 due to the researcher's absence on academic study leave.) The classes were selected for their high level of first year student enrolment. The units and the number of students in each unit are detailed below:

- (1) Japanese 111/511: 69 students
- (2) Japanese 112/512: 43 students
- (3) Japanese 211/513: 22 students
- (4) Japanese 212/514: 21 students

This made a total of 155 students for the purposes of this research. Note that Japanese 212 is available only to students who have completed prerequisite units, such as Japanese 111 (offered in Semester 1), Japanese 112 (offered in Semester 2), and Japanese 211 (offered in Semester 1). Exceptional cases include those students who undertook only Japanese 211 and successfully completed this unit, achieving a pass or higher. These students - regarded as having sufficient knowledge and communicative/linguistic performance skills - are also allowed to undertake Japanese 212.

Attendance records were kept for every lecture. It should be noted that some Japanese units are not available to students whose first language is Japanese, and students are not necessarily required to commence with Japanese 111/511, depending on their proficiency and their previous Japanese learning experience. The units targeted for this research were each offered at Curtin University for 14 weeks in Semester 2 in 2008 and 14 weeks in Semester 1 in 2009.

Lecture (L)	Lectopia status and issues	Hits on Lectopia	Absentees at lecture	
L1 (23 Feb)	available	1	15	
L2 (2 Mar)	available	1	15	
L3 (9 Mar)	available	4	9	
L4 (16 Mar)	available	1	12	
L5 (23 Mar)	available	1	24	
L6 (30 Mar)	available	Nil	3	
L7 (20 Apr)	available	Nil	20	
L8 (27 Apr)	cancelled due to national holiday			
L9 (4 May)	available	1	23	
L10 (11 May)	available	Nil	25	
L11 (18 May)	available	Nil	26	

The frequency of access to Lectopia by students absent from lectures is displayed in Tables 1 to 4.

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L12 (25 May)	available	Nil	21
	Total	9	193

TABLE 1: Japanese 111/511 in Semester 1, 2009 (student enrolment: 69)

Lecture (L)	Lectopia status and issues	Hits on Lectopia	Absentees at lecture
L1 (28 Jul)	Schedule- VGA recording	Nil	17
L2 (4 Aug)	Schedule- VGA recording	Nil	5
L3 (11 Aug)	available	1	3
L4 (18 Aug)	available	1	6
L5 (1 Sep)	available	1	5
L6 (8 Sep)	available	1	9
L7 (15 Sep)	available	1	4
L8 (22 Sep)	available	1	11
L9 (6 Oct)	available	1	5
L10 (13 Oct)	available	1	16
L11 (20 Oct)	available	1	8
L12 (27 Oct)	L12 (27 Oct) available		12
	Total	10	101

TABLE 2: Japanese	112/512 in Semester	2,2008	(student enrolment:	43)
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Lecture (L)	Lectopia status and issues	Hits on Lectopia	Absentees at lecture
L1 (23 Feb)	available- no audio	Nil	4
L2 (2 Mar)	available	1	6
L3 (9 Mar)	available	Nil	5
L4 (16 Mar)	available	Nil	8
L5 (23 Mar)	available	Nil	7
L6 (30 Mar)	available	Nil	3
L7 (20 Apr)	available- no audio	Nil	10
L8 (27 Apr)	cancelled due to na	tional holiday.	¥
L9 (4 May)	available	Nil	5
L10 (11 May)	available	Nil	12
L11 (18 May)	available	Nil	14
L12 (25 May) available		Nil	8
	Total	1	82

 TABLE 3: Japanese 211/513 in Semester 1, 2009 (student enrolment: 22)

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Lecture (L)	ecture (L) Lectopia status and issues		Absentees at lecture
L1 (28 Jul 08)	Schedule- VGA recording	Nil	2
L2 (4 Aug 08)	Schedule- VGA recording	Nil	1
L3 (11 Aug 08)	available	Nil	2
L4 (18 Aug 08)	available	Nil	2
L5 (1 Sep 08)	Available with no VGA	1	5
L6 (8 Sep 08)	available	Nil	3
L7 (15 Sep 08)	available	Nil	4
L8 (22 Sep 08)	available	Nil	5
L9 (6 Oct 08)	Missed- no audio	Nil	3
L10 (13 Oct 08)	available	Nil	5
L11 (20 Oct 08)	available	Nil	4
L12 (27 Oct 08) available		Nil	2
	Total	1	38

 TABLE 4: Japanese 212/514 in Semester 2, 2008 (student enrolment: 21)

In total, there were 21 student hits to Lectopia resources from the target units above, while an optimum total of 414 hits could have been recorded if all absent students had accessed Lectopia for their missed lectures (see Table 5). This number could have been even higher if the students who attended the lectures had also checked Lectopia for the purposes of lecture review.

Weeks in total	Hits on Lectopia	Absentees at lectures
46	21	414

TABLE 5: Number of hits on I	Lectopia compared to	o number of absentees at	t lectures
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Results and discussion

This research examined the statistical significance of the difference between the number of students absent from face-to-face lectures and the number accessing Lectopia.

If students who are absent from a lecture then access Lectopia to view the missed material, then the difference between these two numbers would be zero. However, *t*-test calculations showed a mean difference of 8.54 (SD = 6.89, N = 46), indicating that, on average, 8.54 more students were absent than used Lectopia. The Shapiro-Wilk test indicated that the assumption of normality for this data was violated, so they were transformed by taking the natural logarithm (M = 1.83, SD = 0.81, N = 46). The resultant data then followed a normal distribution (see Table 6).

A one sample *t*-test, with an α of 0.05 was used to compare the transformed mean difference between lecture absentees and Lectopia hits against the value zero. The results showed a statistically significant difference (t(45) = 15.33, p < .001, and large d = 2.26) indicating that students who were absent from lectures did not then access Lectopia (see Table 7).

	Ν	Mean	Std. Deviation	Std. Error Mean
In_hits_diff	46	1.83	.811	.120

	Test Value = 0						
					95% Co	nfidence	
					Interva	l of the	
			Sig.	Mean	Diffe	rence	
	t	df	(2-tailed)	Difference	Lower	Upper	
In_hits_diff	15.331	45	.000	1.834	1.59	2.08	

TABLE 6: One-sample statistics

TABLE 7: One-sample t-test

Thus although Lectopia enables students to access lectures from which they have were absent, a significant number of students do not access the Lectopia environment.

In fact, the student body only accessed Lectopia 21 times (21 hits) over the entire data collection period of two semesters. In addition, it should be kept in mind that 21 hits do not necessarily indicate that 21 students used Lectopia over the target period, as some students might have used it more than once.

As the above results suggest, providing students with access to Lectopia does not necessarily mean that they use it, or take full advantage of it. The quantitative evidence demonstrated above gives support to the growing perception that more attention needs to be paid to the importance of attending traditional face-to-face lectures. It is a common and on-going feature of tertiary education that some students are regularly absent from lectures. However, as demonstrated above, it may be incorrect to assume that these absentees are accessing Lectopia to catch up on missed lectures. The example discussed in this research demonstrates the dissonance that can exist between espoused theory and actual practice.

One strategy to tackle this problem is the allocation of some portion of unit assessment to students' attendance. However, some tertiary education institutions officially forbid lecturers from doing this. Yet in the case of students who are total beginners at learning a foreign language, regular attendance of lectures is critical. At Curtin University, for example, Japanese 111/511, which is organised for total beginners, consists of five contact hours per week: a one-hour lecture and two two-hour tutorial sessions. Since the lecturer introduces target structures and expressions for the week, and the methods for utilising them, students who miss these lectures have no concept of what elements to learn and how they function in sentences. However, there is no mechanism within the existing system to ensure that students who are absent from lectures do not miss out on exposure to important concepts.

Furthermore, the increased availability of lectures on Lectopia may have an adverse effect on students who have previously attended lectures regularly. Repeated absenteeism by peers can give these students the misconception that attending lectures is an unnecessary extra in their education, and consequently, students who were previously studious and attentive can be influenced to be absent from more lectures. This climate may also contribute to the emergence of students who aim to pass units with a minimum of effort and minimum required mark (50/100). This can be a particular problem with students taking the unit as an elective. Moreover, some of these students may believe themselves capable of proceeding successfully

to follow-on units, when in fact they will only fall further behind the acceptable standards. Therefore, it should be highlighted that online learning can function optionally only for highly self-disciplined students (Shapley, 2000, cited in Song & Hill, 2007). Lectopia was not designed to enable students to more readily absent themselves from lectures, but unfortunately, the existence of this flexible learning environment may be starting to create this message for some students.

Conclusion

As outlined above, students who are absent from Japanese lectures at the beginner/preintermediate levels at Curtin University do not, in most cases, rely on Lectopia to catch up on missed material, even when that material is crucial to keeping pace with lesson content.

It is difficult to generalise from such a small and discipline-specific sample. However, these results seem to indicate that although provision of a suitable online teaching and learning environment has become essential to modern tertiary education, it is important to determine whether students are being responsible in their use of that online environment. Thus the researcher recommends that further research be conducted in this area, aiming to determine whether use of Lectopia changes across different disciplines, campuses or indeed universities.

Further, although the benefits offered by flexible and online teaching and learning environments are many, the researcher recommends further research into the development of strategies to monitor student use of such environments, and to ensure that students are using and adequately profiting from flexible learning.

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