English Language teaching using the Internet

Keywords   **Case study, pedagogy, Internet, TESOL, combining ICT with non-ICT**

Abstract

This paper presents the main findings of a case study carried out over a period of approximately five to seven months in 2004-5. It elucidates the issues that six well-qualified[1] ESOL[2] teachers had faced endeavouring to utilize the Internet in their language classes in Intercollege's new ICT[3] language laboratory. The wide range of data sources used in the study comprised: four staggered interviews with teachers; an interview with students and the Head of the Languages Department; teacher classroom observations; a student questionnaire; a teacher lesson plans. A major finding that emerged during the study was how teachers in their first interview had initially appeared mainly positive about Internet use, however as interviews progressed they seemed to have had more jaundiced attitudes. Some negative comments from mainly Greek-Cypriot students regarding having Internet lessons suggested that the way teachers had been using the Internet did not correspond to their students' learning experiences and expectations. In this paper I will describe what effective Internet pedagogy for students studying at Intercollege should comprise and provide links to online examples.

---

[1] Teachers either had Masters or Doctorates in ESOL-related disciplines. Some staff were pursuing Doctorates in areas of TESOL or English Literature.
[2] English for Speakers of Other Languages
[3] Information and Communications Technology

1. Introduction

The Internet being mainly a free resource is increasingly being used in TESOL, and the exponential growth of ESOL websites is, I suppose, a testament to how important the Internet has become. However, realising the potential of this exciting and constantly expanding medium places new pressures on the layman ESOL teacher, who very often has had no pre-service or past in-service training on how to use the Internet in an ICT language lab. In this paper I will discuss how this research was undertaken and disseminate the key findings.

2. Contradictory claims about the Internet

There seems to be disagreement in the literature regarding the effectiveness of the Internet; appertaining to the efficacy of the Internet, some contemporary Internet-germane literature appears to be advancing the claim that Internet-use is advantageous for learning. Frey (2002: 1-4) for instance states that the Internet is awash with activities that offer many new ways of teaching and learning, and asserts that even the most Luddite of university scholars now realise the potential applications of technology. There is, however, a growing research consensus that appears somewhat *sceptical* apropos Internet classroom usage. Warchauer (2003.1-2) holds the belief that there has certainly been no shortage of bold claims about how computers will revolutionise the classroom, transforming the teacher from the stereotypic *cliché*, 'sage on the stage' to the new and equally hackneyed 'guide on the side'. A lot of Internet-relevant literature also asserts that there is lack of sound Internet pedagogy (the word appears to be used in a *method-of-teaching* sense). Wood (1999: 1) for instance, provides an overview of Internet sites that could be helpful in the ESOL classroom. He deems (Ibid.1) that a lot of pedagogical books, articles, and 'exhortations' about the educational significance of the Internet often turn out to be little more than lengthy lists of Web page addresses (URLs). He argues (Ibid,1) that 'what is often missing from the huge array of Internet materials for pedagogic purposes is any clear identification of the new pedagogical opportunities that the Internet offers'.

3.   The central research issue

This study therefore dealt with the challenges of using the Internet in ESOL lab classes. As using the Internet in TESOL in the Intercollege language lab was an innovation, there was a need to become more aware of the issues; this underlying professional-development aim was therefore reflected in the global research aim. In the study the global research aim was to describe and interpret the key issues six Intercollege ESOL teachers faced over a five-to-seven month period using the Internet in TESOL. The global research aim also had two associated strands: firstly, to analyse how and/or why such issues affected teacher awareness of using the Internet to teach ESOL in the language lab and secondly, to determine how such issues might be addressed. None of the teachers that took part in this research had used the Internet in TESOL in a language-lab environment to any major degree before or had had any related pre-service training. The teachers in the study were given well-known ESOL Internet sites (available on http://www.englishlab.intercol.edu/papers/esol.htm) to assist them with using the Internet.

4.   A research framework based on relevant ICT literature

A research framework was formulated by creating two tables based on pertinent literature and professional context. These tables were used as the anchor for guiding the data collection. The areas that were analysed in Table 1 (refer to appendix 1) were: confidence, competence, time, components comprising Internet site quality, and some other potentially relevant domains of research. Table 2 (refer to appendix 2) looked at Internet lesson planning, student epistemology[4], syllabus design, improvement, roles and change.

5.   Research methodology

The interpretative paradigm used in this study provided a *thick* and personalised description of research issues and a platform from which interpretations were made. Four semi-structured interviews of about 30-40 minutes in length were undertaken on the six teachers over a five-to-seven month period in the research.

---

[4] Laurillard (2002: 202-3) holds that students will have nurtured throughout all their previous educational encounters a conception of how one comes to know i.e. their conception of what learning is and how it should be done.

The purpose of interview 1, which was carried out after between one and two months of lab use[5], was to get some panoramic information about the teacher, and to establish whether there were any immediate needs or issues that needed addressing. Table 1 issues were mainly used as a framework for guiding this interview. Even though teachers in interview 1 were also encouraged to discuss broad views on Internet pedagogy, a fuller discussion on pedagogy took place in interview 2. Interview 1 was partially transcribed and analysed. Issues or *leads* that in my opinion appeared to stand out or needed clarification were followed up in interview 2.

With regard to interview 2, the main aim was to use the issues encapsulated in Table 2 as a framework for guiding the research; however, key interview 1 points were also followed up in interview 2 and any new concerns were noted. The rationale why there was an approximate one to two-month gap between interviews was that I wanted to ascertain if teachers' attitudes towards using the Internet would change.

Interview 3 consisted of a discussion on interview 2 follow-up questions and teacher lab observation data. The aim of the observation was to see how the teacher might realise a pre-planned Internet lesson and to generate interrelated questions for interview 4 (the teacher gave me the lesson plan before the observation). In this way, an attempt was made to provide a real-time perspective of issues discussed in interviews 1 and 2.

The final interview drew on the perspectives of two other groups i.e. the opinions of students (i.e in a questionnaire) and the views of the Head of the Languages Department as an impetus for eliciting more data regarding lab use (some interview 3 data however, were also followed up if required).

6.   Data analysis

The issues that I addressed in the data analysis were grounded in the research data. I collected data comprehensively[6], with an open mind, and as the study progressed I continually examined data for patterns. I linked what I had observed and described during the research process to what I had encapsulated in Tables 1 and 2. Table 1 and 2 issues were used as a means of guiding the interview research. I therefore ascertained the key themes from the data first and then I sought to establish a link, if possible, with issues discussed in the literature. Moreover, I did not assume that data would pertain conveniently to one issue; rather, I held some data might correlate to several issues.

The first stage in the analysis therefore was to establish the key themes and their related sub-themes, the key themes and the sections in which they will be discussed were:
- Raised awareness of the drawbacks of Internet use (section 7.1)
- Slow/unreliable Internet connection (section 7.2)

---

[5] Frequency of lab use varied from teacher to teacher i.e. some teachers used the lab weekly, others less frequently.
[6] Over 35,000 words of interview data had been transcribed and 123 completed questionnaires had been analysed. 6 student interviews had been transcribed and lesson observation data analysed. Moreover I had access to many teacher lesson plans.

- Competence (section 7.3)
- Time (section 7.4)
- Internet lesson analysis (discussed in section 8.1)
- Pedagogy (section 8.2)
- Belief issues (section 8.3)
- Student epistemologies (section 8.5)
- Student improvement (section 8.6)

The second stage involved trying to establish the causes of teachers' raised awareness. Figure 1 below attempts to capture visually the processes I followed. Questions regarding the likely cause(s) of raised awareness were addressed by analysing the implications of key-theme data. Then I developed theory regarding Internet pedagogy (this theory will be discussed in sections 8.1, 8.2 and 8.3.1) and change (i.e. discussed in section 8.4).
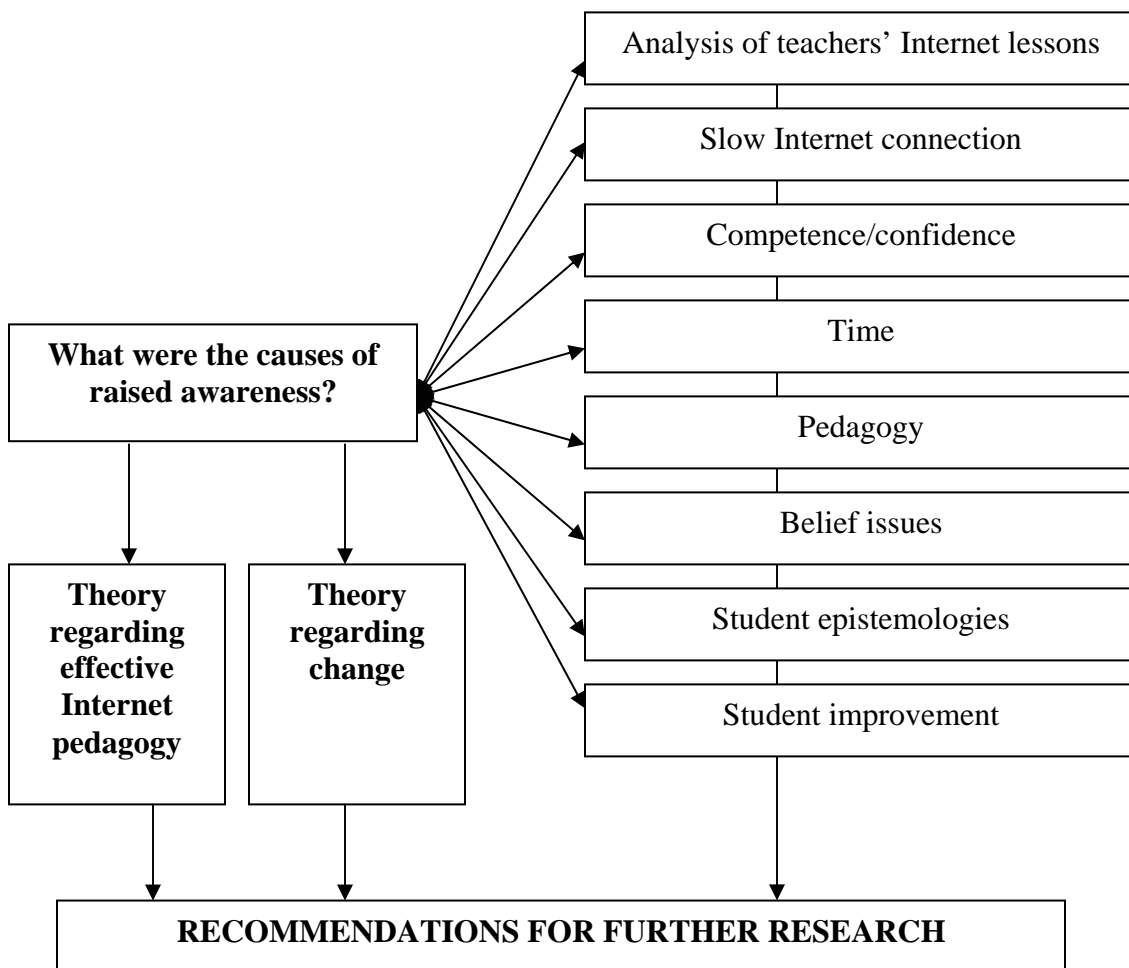

Figure 1   The processes of the data analysis

7.   Findings that related mainly to the teacher

The data extracts written in italics followed by a transcript code are the words used by teachers. The transcript code comprised three parts: (1) interviewee teacher number (T1 to T6); (2) semi-structured interview number (1 to 4); (3) interview question number (numbers ranged from 1 to 30).

7.1   Raised awareness of the drawbacks of using the Internet

A key theme that emerged during the study and discernible in all six teacher interview data corresponded to teachers becoming increasingly *alive* to the implications of certain drawbacks of Internet-ESOL lab use. Teachers in their first interview had initially appeared mainly positive about Internet use, however as interviews progressed they seemed to have more jaundiced attitudes[7]. Initial teacher enthusiasm about using the Internet resonated with literature on the attractions of Internet as a teaching resource, as exemplified in, Frey (2002: 1-4), Morrison (2002 1-7). Yet, the heightened teacher awareness regarding perceived drawbacks of using the Internet in subsequent interviews (i.e. attitudinal changes) resonated with literature on scepticism about Internet use e.g. Kirschner and Selinger (2003: 1-2), Warschauer (2003: 1-2).

The data sample below provides an example of teacher attitudinal change

7.1.1   Teacher one sample data suggesting raised awareness of the drawbacks of Internet use

The way negative student comments about lab-lessons presented in the account below had changed T1's ostensibly enthusiastic initial outlook to a more critical and less animated stance, point to what T1 had been doing in the lab (i.e. her Internet lesson pedagogy) may have militated against her students' language-learning expectations. This hypothesis resonates with Laurillard (2002: 202). Asserted lack of appreciation from students for the time T1 had put into preparing lessons also may have raised critical awareness.

T1 in her first interview, which was undertaken a few weeks after using the lab for the first time, seemed to be 'ablaze' with enthusiasm about using the Internet. For instance, she stated that she had felt the lab was a *very good alternative to traditional face-to-face*

---

[7] I.e. with the exception of T6 and partly T4, who were more critical initially possibly because they had been using the lab prior to taking part in my interviews

teaching, especially at the end of the semester[8] (T1/1/06). She held that she *loves using the lab* (T1/1/09) and said that she was *very excited about using it* (T1/1/09). She 'pontificated' that *the variety of Internet exercises available can help to address students' different learning styles* (T1/1/10) and that her students *enjoyed using the lab* (T1/1/12). Moreover, she seemed to be 'selling out' as a 'traditional' ESOL teacher when she deliberated over the benefits of using the lab in comparison to the then 'seemingly passé' non-ICT classroom. For example she expressed the view that: *instead of me giving the exercises out, the Web sites do it. They are given the answers. It builds up autonomous learning; they don't need the teacher. We teachers are so vain we want to be the ones that transmit knowledge* (T1/1/11-13). She also mentioned using the Internet helped her to teach her students language and computer skills i.e. *things that they are going to use for the rest of their lives* (T1/1/08).

However, approximately two months later in interview 2, there was a feeling that the 'novelty factor' might have been 'wearing off' and that her students had appeared critical of Internet lesson materials i.e. she changed her view: *The first time it was exciting for them, now some of them say that they feel the teacher is lazy because they are doing the work and the teacher sits and monitors them, they don't realise that I have spent three to four hours preparing the lesson* (T1/02/07). In interview 3, about two months after interview 2, there was more qualitative negative feedback. This was epitomised in T1's third interview i.e. when asked what kind of feedback she had been getting from her students regarding her lessons, she responded: *Some of my students are especially outspoken, they feel it's a waste of time* (T1/3/01).By interview 4 (i.e. carried out about one month after interview 3), T1 stated, with regard to the twenty percent of students who stated in the questionnaire that they had liked using the Internet a little or not at all, that: *maybe they don't like using the computer for language learning, it's a huge percentage, so it would affect me, I would tend to use it less* (T1/4/02).

7.2   The relevance of unreliable Internet connection

The data implied that the main technical problem that hampered teachers in this study pertained to unreliable Internet connection; the six points below in Figure 2 comprise the main issues, and affirm, as in Bastid (2002), that there is a need for reliable Internet access. Additionally, it follows that not addressing this issue has a number of teacher and student ramifications. In figure 2 I move from a summary description and interpretation of the six points to the construct of greater teacher critical awareness of the drawbacks of using the Internet in TESOL. The main implication therefore of unreliable Internet connection for pedagogy is teachers should not rely on one site; moreover, they may also have to prepare back-up lessons if there is no Internet connection. There are also pedagogy implications of not being able to practise speaking and listening skills easily in the Lab. This in turn may have some ramifications for student epistemologies and teachers' teaching styles i.e. students may expect some speaking and listening practice.

---

[8] NB T1 explained that at the end of the semester students were very often more tired and less able to concentrate; the lab therefore provided a 'change' from the traditional classroom.

```
┌─────────────────────────────────────────────────────────────────────────────┐
│         The implications of unreliable Internet connection for teachers        │
└─────────────────────────────────────────────────────────────────────────────┘
```

Teacher frustration	Having to prepare a non-ICT back-up lesson	Not being able to rely on one site Section	Embarrassment in front students and a need for more College support	Student complaints and misbehaviour	Not being able to send and receive sound files quickly.
De-motivating	Time and pedagogy implications	Time and pedagogy implications	De-motivating for teachers	Negatively affecting student and teachers' beliefs about learning	Pedagogical implications

Possible greater teacher critical awareness of the drawbacks of using the Internet in TESOL

Figure 2   Implications of unreliable Internet connection

7.3   Competence

Twelve competence-bound data issues which arose from the data and are an indication of the number of discrete elements that could be subsumed within ICT competence; moreover, in this context, effective implementation of ICT may be predicated on being cognisant of the main implications of these issues.   In figure 3 below, this study's competence issues are set out and a link is made to likely outcome. It is asserted that these issues need to be addressed mainly through more relevant training over an extended period (i.e. as signified by the two-directional arrows); however some issues may also need to be addressed by the College e.g. points 4, 5, 6 and 7. The table therefore emphasises the 'tangled' nature of ICT competence (Jones 2004: 8-9) and advances the

claim that the teacher's ICT competence plays a major role in how ICT is implemented and whether teachers will be motivated to implement it (Gobbo and Giradi 2001: 63).

Figure 3 also draws attention to the need for effective training (Jones Ibid.8-9) and the need for organisational support (Coles *et al.,* 2000: 178); moreover, it sets forth the notion that confidence and levels of lab use are directly affected by lack of teacher competence in using ICT (Pina and Harris, 1993 and Lee, 1997 cited in Jones, 2004: 8-9). The key implication of the table in this context is that addressing the above competence-issues may over time fuel the drive towards higher and more stable levels of awareness regarding the advantages of Internet use.

There are therefore some implications of competence for teacher roles: teachers may have to take on a technician role, especially with non-ICT competent students. Moreover, students may need to acquire or have basic ICT skills in order to use an Internet lesson in the lab. The significance of Internet pedagogy will be discussed in detail in section 8.1.1 and the implication of the teacher's new monitor role will be discussed in section 8.3.1.

| 1 Low levels of competence | → | Lack of confidence | ← | | → | Possibly de-motivating | ← | 7 Feeling the College did not value the time teachers put into lessons |

```
┌─────────────────┐     ┌──────────────┐                              ┌──────────────┐     ┌──────────────────────┐
│ 1 Low levels of │ ──► │ Lack of      │ ◄──┐                    ┌──► │ Possibly de- │ ◄── │ 7 Feeling the College│
│ competence      │     │ confidence   │    │                    │    │ motivating   │     │ did not value the time│
└─────────────────┘     └──────────────┘    │                    │    └──────────────┘     │ teachers put into    │
                                            │                    │                         │ lessons              │
┌─────────────────┐     ┌──────────────┐    │                    │    ┌──────────────┐     └──────────────────────┘
│ 2. Lack of prior│ ──► │ Lack of      │ ◄──┤                    │    │ Raises anxiety│
│ lab experience  │     │ competence   │    │                    ├──► │ and negatively│ ◄── ┌──────────────────────┐
└─────────────────┘     └──────────────┘    │                    │    │ affects       │     │ 8  Experiencing      │
                                            │                    │    │ confidence    │     │ technical problems   │
┌─────────────────┐     ┌──────────────┐    │                    │    └──────────────┘     └──────────────────────┘
│ 3. Feeling more │     │ Indicative of│    │                    │
│ training and in-│ ──► │ how          │ ◄──┤                    │    ┌──────────────┐     ┌──────────────────────┐
│ lab support were│     │ competent    │    │                    │    │ De-motivating│     │ 9  Dealing with more │
│ needed          │     │ teachers feel│    │                    │    │ for a less ICT-│    │ ICT-competent and at │
└─────────────────┘     └──────────────┘    │                    ├──► │ competent    │ ◄── │ times, obstreperous, │
                                            │                    │    │ teacher;     │     │ students; having to  │
┌─────────────────┐     ┌──────────────┐    │  More relevant     │    │ negatively   │     │ answer their questions│
│ 4. Feeling the  │     │ De-          │    │  addressing of     │    │ affects      │     └──────────────────────┘
│ College had not │ ──► │ motivation,  │ ◄──┤  issues mainly     │    │ confidence   │
│ created a       │     │ negative effect│   │  through training  │    └──────────────┘     ┌──────────────────────┐
│ supportive PD   │     │ on change    │    │                    │    ┌──────────────┐     │ 10. Not being able to│
│ environment     │     │ process      │    │                    │    │ Loss of      │     │ use the Management   │
└─────────────────┘     └──────────────┘    │                    ├──► │ control over │ ◄── │ Software             │
                                            │                    │    │ obstreperous │     └──────────────────────┘
┌─────────────────┐     ┌──────────────┐    │                    │    │ students, loss│
│ 5  Not having   │     │ De-          │    │                    │    │ of confidence│     ┌──────────────────────┐
│ time to undergo │ ──► │ motivating,  │ ◄──┤                    │    └──────────────┘     │ 11. Lack of pedagogy │
│ training        │     │ negative effect│   │                    │    ┌──────────────┐     │ training             │
└─────────────────┘     │ on confidence│    │                    ├──► │ Raises       │ ◄── └──────────────────────┘
                        │ and lab use  │    │                    │    │ awareness of │
                        └──────────────┘    │                    │    │ the drawbacks│
┌─────────────────┐     ┌──────────────┐    │                    │    │ of Internet use│   ┌──────────────────────┐
│ 6  Pressure to  │     │ De-motivating│    │                    │    └──────────────┘     │ 12. Dealing with non-│
│ be seen using the│ ──► │ and negative │ ◄──┤                    │    ┌──────────────┐     │ ICT competent        │
│ lab             │     │ effect on    │    │                    ├──► │ Emphasizes   │ ◄── │ students             │
└─────────────────┘     │ confidence if│    │                    │    │ the new ESOL │     └──────────────────────┘
                        │ the teacher is│   │                    │    │ teacher's lab│
                        │ not competent│    └────────┬───────────┘    │ technician role│
                        └──────────────┘             │                └──────────────┘
                                                     ▼
```

Possible greater teacher awareness of the advantages of using the Internet in TESOL

Figure 3   A broad and complex view of the elements that a consideration of ICT competence in the research context should encompass.

7.4   Time

Figure 4 below attempts to link the issues discussed in this section to outcome. Its implication for the concept of time as a management of change phenomenon is, more time may be needed to start innovative practice with efficiency benefits emerging later (i.e. time is needed for new ideas to percolate through to teachers en masse). This implication echoes with Downes *et al.,* (2001: 75) who assert that teachers, researchers, and policymakers consistently indicate that the greatest challenge to implementing effective professional development is having time to understand new concepts, learn new skills, develop new attitudes, research, reflect, discuss, access, try new approaches and integrate them into their practice, time to plan their own professional development. Moreover Manternach-Wigans *et al.* (1999 cited in Jones 2004: 15) also hold that teachers need more time to learn computer basics, plan how to integrate technology into their lessons, and actually use the technology in the classroom.

Time–related research issues

| 1. Time-consuming site selection process | 2. Time-consuming preparing lessons and/or lesson handouts | 3. Lack of support from ELT publishers, the need to develop *homegrown materials* | 4. Feeling that the College and the students did not appreciate teacher effort Lack of time to undergo training |

De-motivating and raising awareness of the drawbacks of Internet use

Implication: more time needed to start innovative practice (i.e. with relevant training and support)

Efficiency benefits emerging later

Figure 4   The relevance of time as a management of change phenomenon

8.   Findings that related mainly to the student and lesson materials

The issues that will be described in section 8 are grouped loosely into three perspectives discussed below in sections 8.1 to 8.4

8.1   Analysis of teacher Internet lessons

Teachers' Internet lessons and observation data provided a precious data source that suggested that pedagogical development lies at the heart of Internet use. In this context it implied incorporating elements of traditional non-ICT and ICT teaching i.e. using the Internet as a 'tool' for learning (discussed in detail in section 8.3.1). Moreover it was my interpretation that teachers' inability to use more appropriate Internet pedagogy was the most likely cause of teacher perceived student rejection, teacher hesitancy regarding being able to measure student improvement and teacher raised awareness of the drawbacks of Internet usage.

8.1.1   Lesson analyses

The lesson analyses indicated that various factors ought to be considered when planning an Internet lesson. In the context of the research, Internet pedagogy should:

- Have aims that are perspicuously reflected in lesson materials. Not stating lesson aims might be confusing for students. Section 8.5 data on student epistemologies suggested that teachers felt that some negative student feeling pertained to lab-lessons not being like traditional lessons. Most TESOL textbooks state the aims of the lesson to the student. Even though this may at first sight appear obvious advice to any teacher, many teachers preparing Internet lessons in this study lost sight of this seemingly fundamental TESOL lesson-planning principle. This could be a consequence and drawback of using the Internet. Also, teachers did not generally appear to consider to what degree lesson aims had determined the sites chosen or to what extent lesson sites had determined lesson aims. With regard to the latter, a weakness of this approach was that unsuitable sites had been used as a basis for determining lesson aims and teachers lost sight of how to inextricably link sites to course content.

- Make a coherent connection with course examinations (as in T4's example in Plate 3). This issue is discussed in section 8.5). Moreover, students appeared to want to see a clear connection between what they did in their Internet lessons and how they would be tested. Students appeared to need hard-copy lesson handouts as well as electronic-version handouts to accompany their Internet use. Windeatt *et al*. (2002: 11) hold with regard to post-Internet-lesson-lab work, that 'anything done in the computer room should be transferable back to the normal classroom'.

Moreover, Windeatt *et al*. (Ibid.11) maintain that students should have something physical to take away with them so that they have a record for follow-up work or end-of-course revision.

- Use technology to reinforce existing practice i.e. they should have non-ICT elements in the lesson (e.g. Internet pertinent exercises as with T4 in Plate 3). This issue is discussed in detail in section 8.3.1). Moreover in section 8.5 on student epistemologies, I assert that data suggested students wanted/expected to be taught more traditionally without being given so much autonomy.

- Select suitable sites level-wise (i.e. grammar/vocabulary) and topic-wise. However data suggested that this was a difficult undertaking. Teachers first had to *search* ESOL homepages (i.e. from a vast and growing collection of homepages) and then *choose* exercises usually from a substantial assemblage of exercises per ESOL homepage. Moreover a pertinent characterisation of the data was that 'searching' for a list of possible lesson sites was more time-consuming than 'choosing' which sites from that list would be used.   Finding suitable course-relevant Internet lesson sites was therefore a difficult task. Godwin-Jones (1999: 12-16) holds the opinion that a troublesome issue with Internet-use is locating desirable Websites that are appropriate in terms of language level, media format, interest and reliable information. Furthermore, it was very time consuming to prepare lesson handouts in Word or PowerPoint format.

- Pre-screen sites sufficiently well to prepare pro-actively for student questions. This also suggested that teachers should not relinquish their traditional *deliverer-of-content* role. Windeatt *et al*. (Ibid. 10) state that in some cases, before beginning an activity on the computer, it will be necessary to pre-teach vocabulary, or a specific function or structure. Unfortunately, there seems to be a lack of ESOL-publisher editorial support and so there is a dearth of appropriately pre-screened textbook-complementary ESOL-Internet exercises. Teachers also had difficulties in trying to find sites with comparable vocabulary to which the students had been exposed in their non-ICT classes. In this study, giving long lists of ESOL resources to teachers did not seem to help them much. This suggested that teachers required more than just lists of well-known ESOL homepages; teachers needed effective pedagogical guidance on how to use the Internet materials (also asserted in Wood, 1999:1, Hanson-Smith 2003: 1-11, Kuechler, 1996 and LeLoup and Ponterio, 2000).

- Consider carefully how to time and sequence Internet-site materials. The following recommendations can be made based on the research findings. (1) Teachers should use several sites and not rely on one lesson site just in case it does not work (i.e. as in Plate 3). (2) Teachers should not use too many sites as

this encourages students to rush through the sites working less conscientiously. However students also might *rush through* sites because the teacher does not (a) explain the site tasks to the students and sequence and time lesson materials; (b) put time into selecting engaging sites for students. Another issue that related to students working less conscientiously was that the interactive nature of some sites enabled students to find the answer without reading or thinking about the question. Fewer sites and more teacher interaction (i.e. more non-ICT teaching) might lead to better teacher control over the regulation of learning. (3) Teachers should be careful of ELT-game sites; students were drawn to game sites when they should have been doing other tasks. (4) Teachers ought to have a set of core Internet exercises for weaker students and additional exercises for students that finish earlier. Teachers need more time to pre-screen and organise Internet materials so as to know which sites should be core for all students to cover, and which ones ought to be additional for more able students

In figure 5 below it is posited that sine-qua-non pedagogical development lies at the heart of Internet ESOL use. The supposition is that key competence training should proceed training orientated towards pedagogical development; however some competence issues (i.e. as outlined in figure 3) may require ongoing training/support. The figure highlights the multifaceted nature of training and support orientated towards pedagogical development; it also links such development to outcome (increased ICT confidence) and evidences that pedagogical development may be the immanent principle of Internet use.

```
                    ┌─────────────────────────┐
                    │ Ongoing training/support│
┌──────────────┐    │ to deal with ICT        │    ┌──────────────┐
│ Belief-related│   │ competence issues       │    │ Pedagogy-    │
│ issues       │    │ Figure 3                │    │ related issues│
│ Section 8.3  │    └─────────────────────────┘    │ Sections 8.1-8.2│
└──────────────┘                                    └──────────────┘

                  ┌─────────────────────────┐
┌──────────────┐  │ Training and support    │     ┌──────────────┐
│ Student-     │  │ orientated towards      │     │ Unreliable   │
│ improvement -│  │ pedagogical development │     │ Internet-    │
│ related issues│ └─────────────────────────┘     │ connection-  │
│ Section 8.6  │                                   │ related issues│
└──────────────┘                                   │ Figure 2     │
                                                   └──────────────┘
                  ┌─────────────────────────┐
┌──────────────┐  │ Pedagogical             │     ┌──────────────┐
│ Student-     │  │ development             │     │ Time issues  │
│ epistemology-│  └─────────────────────────┘     │ Section 7.4  │
│ related issues│                                  └──────────────┘
│ Section 8.5  │
└──────────────┘
                  ┌─────────────────────────────────────┐
                  │ Possible increased teacher awareness │
                  │ of the advantages of using the      │
                  │ Internet in TESOL                   │
                  └─────────────────────────────────────┘

                  ┌─────────────────────────────────────┐
                  │ Increased teacher confidence        │
                  └─────────────────────────────────────┘
```

Figure 5   The central relevance of training and support orientated towards ESOL-Internet pedagogical development

8.2   The intricate nature of Internet pedagogy

The four points with their sub-points discussed below are the key issues associated with pedagogy that arose from the data, they relate to (1) teaching skills' issues, (2) materials' issues, (3) learner needs' issues, (4) physical environment issues. They are applicable mainly to Table 2. In figure 6 below it is held that more specific Internet pedagogy training and support is required to deal with the issues. The gamut of pedagogy issues advances the claim that pedagogy training is a consequential and intricate area that may also involve a consideration of teachers' beliefs. Figure 6 resonates with Veen (1993) cited in Jones (2004:10) who states that pedagogy training is essential for the successful implementation of Internet usage and training courses that lack pedagogical aspects are likely to be unsuccessful.

Key teaching skills' issues	Some key materials' issues	Key learner needs' issues	Physical environment issues
Feeling the need to undergo pedagogy training	Uncertainty regarding how many Web links should be in an Internet lesson	Feeling that most ESOL Internet sites were orientated towards grammar/vocabulary practice	Too few computers in the lab i.e. some students had to share computers
Needing to know how to make a connection with course examinations	Having too many sites might encourage students to work less conscientiously.	Problems matching sites to the level of students	Not being able to *get* near to students, restricted access to students made it harder to organise pair/group work Refer to Plate 1 below
Not knowing how to do pair/group work	Students being drawn to game sites when they should have been doing other tasks	Having to pre-teach some Internet site vocabulary	
	Having to have a set of core Internet exercises for weaker students		
	Feeling untrained to design Internet lesson handouts		

More specific teacher Internet-pedagogy training/support to help raise teacher awareness of the advantages of ESOL Internet use

Figure 6   Some pedagogy-related issues that arose from the research

Figure 6 also suggests that training should be differentiated according to teachers' experience and skills in using computers (i.e. in this way differing amounts of skills training can be delivered according to individual teachers' needs (Veen, 1993 cited in Jones, 2004:10).

Plate 1   Restricted access to students in the language lab

8.3   Two key belief issues

In section 8.3 I will discuss two key belief issues that arose from the research. These areas relate to (1) a possible new teacher monitoring role, (2) the teacher perception that students did not interact as much in the lab.

(I)   The teacher's new *monitor* role

Data indicate that the role change brought about by monitoring students passively from the teacher computer via the Management Software as opposed to going round and speaking to students individually militated against some teachers' beliefs. Plate 2 below illustrates what the teacher would see from her computer; here nine students are being monitored.

The monitor function offers the teacher a variety of *powerful* options. The teacher can:
(1) enlarge any screen
(2) take control of, or work with, any student computer
(3) send what any student has on the screen to any number of other students.
(4) To monitor any number or chosen combination of students (Plate 2 shows nine students being monitored)
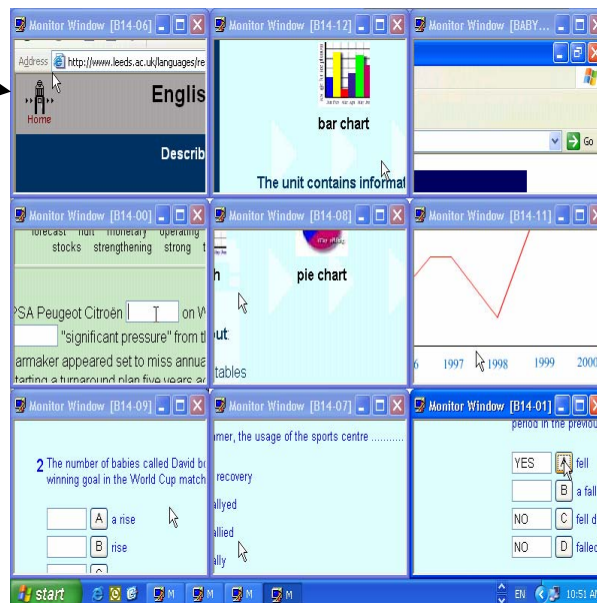
Plate 2   The monitor function

T2 with regard to monitor functions in (T2/3/12) revealed that *I think this 'me and them' relationship is a bit difficult. It's not something I'm comfortable with because I don't do it a lot in my classrooms. The classroom is more open. I don't usually use the monitor function. I prefer to go round individually.*

(II)   Lack of interaction (also pedagogy-related)

A further issue bears on the teacher belief that the lab had affected interaction with students; teachers and students interacted less in English in the lab than in the non-ICT classroom. T6 for instance held that *I don't feel it's teaching in the traditional sense; there is no interaction, I don't believe it takes the place of the personal interaction* (T6/2/28).

8.3.1   Using technology to reinforce existing practice (belief-related)

With regard to whether technology is being used as a servant to reinforce existing teaching approaches or as a partner to change the way teachers and pupils interact with each other and with the tasks (a question posed by Cox *et al.*, 2004: 5 and Moseley and Higgins *et al* 1999: 89), a key issue stated in the context of the research is how using technology in a way that did not reinforce existing teaching/learning approaches might have raised teachers' awareness of the drawbacks of Internet use. The bullet points below highlight the key reasons why I felt this to be the case:

- Student epistemologies discussed in section 8.5 suggested that teachers needed to make clear how Internet materials would relate to course exams (e.g. by preparing non-ICT materials to be rote-learned by students).

- Epistemological data analysed in section 8.5 indicated that some students had not wanted to do so much autonomous work; rather they had preferred to be taught traditionally.

- Implications of lesson analyses in section 8.1.1 (on factors comprising Internet pedagogy) were suggestive of how an admixture of non-ICT and ICT pedagogies might deal with the two points above.

- In section 8.2, I stated that many teachers felt they did not know how to use the Internet and make a connection with College exams (i.e. curricular ends orientation); however, this connection was made by T4 in Plate 3 by incorporating non-ICT elements.

- In section 8.2 I stated that an implication of giving students too many sites with no teacher interaction was students rushing through the sites. This suggested that having fewer sites and more teacher interaction (i.e. more non-ICT teaching) might lead to better control over the curriculum and teacher monitoring/regulation of learning.

- Data also suggested that relying wholly on the Internet led to a compromise of teachers' control/regulation of the lesson. This point also relates to the second bullet point in this section i.e. maybe students expect to be controlled/monitored.

- Data findings suggested that ESOL Internet use seems to be narrowing the FL curriculum to mainly grammar and vocabulary practice. However, the main drive of non-Internet related FL curricula is to broaden the scope of activity by engaging with communication and intercultural learning. This was a strong argument to consider combining ICT and non-ICT teaching.

- As recommended in sections 8.1.1, teachers should pre-screen sites sufficiently well to prepare pro-actively for student questions. This suggested that teachers should not relinquish their traditional *deliverer-of-content* role.

- Teacher feedback on pedagogy indicted that teachers had wanted to make use of traditional teaching pair/group-work methodology in the lab. Moreover, an examination of belief issues suggests that teachers wanted to retain aspects of traditional classroom practice e.g. monitoring students via the teacher's computer (as described in section 8.3) seemed to be an assault on teacher beliefs about how they saw their teacher roles. These points seem to relate to Moseley and Higgins *et al* (1999: 14-16); they suggest that 'more unobservable' and possibly deeply-held teaching beliefs influence the way teachers use ICT. Such teacher feeling related to wanting to retain traditional aspects of their teaching roles did not

generally appear early on in the study; this therefore suggested that training and support directed towards combining ICT and non-ICT teaching should take into account such beliefs as they 'come to the surface'. However combining ICT and non-ICT methods may necessitate some realignment of beliefs; in section 8.3 on 'change', I discuss Fullan and Smith's (1999: 9-13) term 'rethinking' (i.e. acquiring new beliefs and understandings about change).

- The possibility of unreliable Internet connection rationalised the need to incorporate non-ICT elements in lessons (i.e. as discussed in section 7.2). If there was no Internet connection, the teacher would not have to cancel the lesson, she could concentrate on the non-ICT lesson elements (also described in Plate 3).

The arresting implication of the above points therefore is that in the context of Intercollege an attempt should be made to use the Internet in a way that helps teachers to conflate established non-ICT-classroom and new ICT practices. This assertion accords with Albaugh (1997 stated in Jones 2004: 17) who attaches weight to teachers tending to 'adopt a new technology when that technology helps them to do what they are currently doing better'. Moreover Schwienhorst (1999, 4) asserts that it is important to emphasise the role of the computer as assisting traditional classroom discourse.

8.4   Change

With regard to the change process, Jones (2004: 14) holds that numerous researchers looking at barriers to ICT use draw attention to the issue that in the teaching profession generally there is inherent resistance to change, and that this is a barrier to some teachers' use of new technologies.

- **Possible resistance as a result of emerging valid reservations**

I however did not feel that the teachers in the study had initially been inherently resistant to change, rather they appeared, as expounded in section 7.1, to have been on the whole positive about using the Internet in their first interview, but increasingly drew attention to its drawbacks in subsequent interviews. An echo of Rakes and Casey (2002: 1) can be found in this observation: they profess that even teachers who hold positive attitudes towards technology may have dilemmas transferring these attitudes into productive actions.

Even though I could not assess the degree to which teachers' growing awareness of the apparent drawbacks of Internet usage may have led to, or increased, their resistance to change, I felt that there were connotative clues in the data that teachers, whose critical awareness of the drawbacks of Internet use had grown, had also become resistant to change; there was some data evidence that teachers' raised awareness of the drawbacks of Internet use affected how often they wanted to use the lab. For example T1 in her final interview may have stated she might use the lab less in future because she had become resistant to change (section 7.1.1).

- **No perceptible resistance as a result of emerging valid reservations**

However, some of the teachers who had drawn a great deal of attention to drawbacks of Internet usage (e.g. T2 or T6 in her second Interview), had been using the lab regularly, and so raised awareness had not affected these teachers' use of the lab. This signified that these teachers may not have been resistant to change, but conscious of, and contending with, real shortcomings (i.e. as they perceived them to be) of Internet use in their context.

Figure 7 below attempts to shed some light on the issue of change in this context by suggesting how training and/or College support (i.e. as discussed in Fullan and Smith, 1999: 9-13) applied to the three key Section 7 issues (i.e. unreliable Internet connection, competence and time discussed in sections 7.2, 7.3, and 7.4 respectively) and the four key section 8 issues (i.e. student epistemologies, student improvement, belief issues and Internet pedagogy) might increase teacher awareness of the advantages of using the Internet in TESOL. Moreover the dynamics of the figure are interactive, suggesting that change might be correlative of (1) a complex process of developing new skills, behaviours, and practices associated with the change (i.e. *redoing* Fullan and Smith, 1999: 9-13), (2) acquiring new beliefs and understandings about the change (*rethinking* Fullan and Smith, 1999: 9-13).

I also have included Kiely's (2001) perspective on the process of developmental feedback-resistance-reflection-innovation cycles (this will also be discussed in section 8.4.1). The figure is also indicative of how change could be a long-term process of belief and practice realignment. This resonates with Fullan and Smith (1999: 9-13) who maintain that 'one-shot workshops, no matter how good, will not (cannot) have much of a carryover effect. There needs to be continuous assistance *during initial implementation*' (Fullan and Smith, Ibid.9-13).
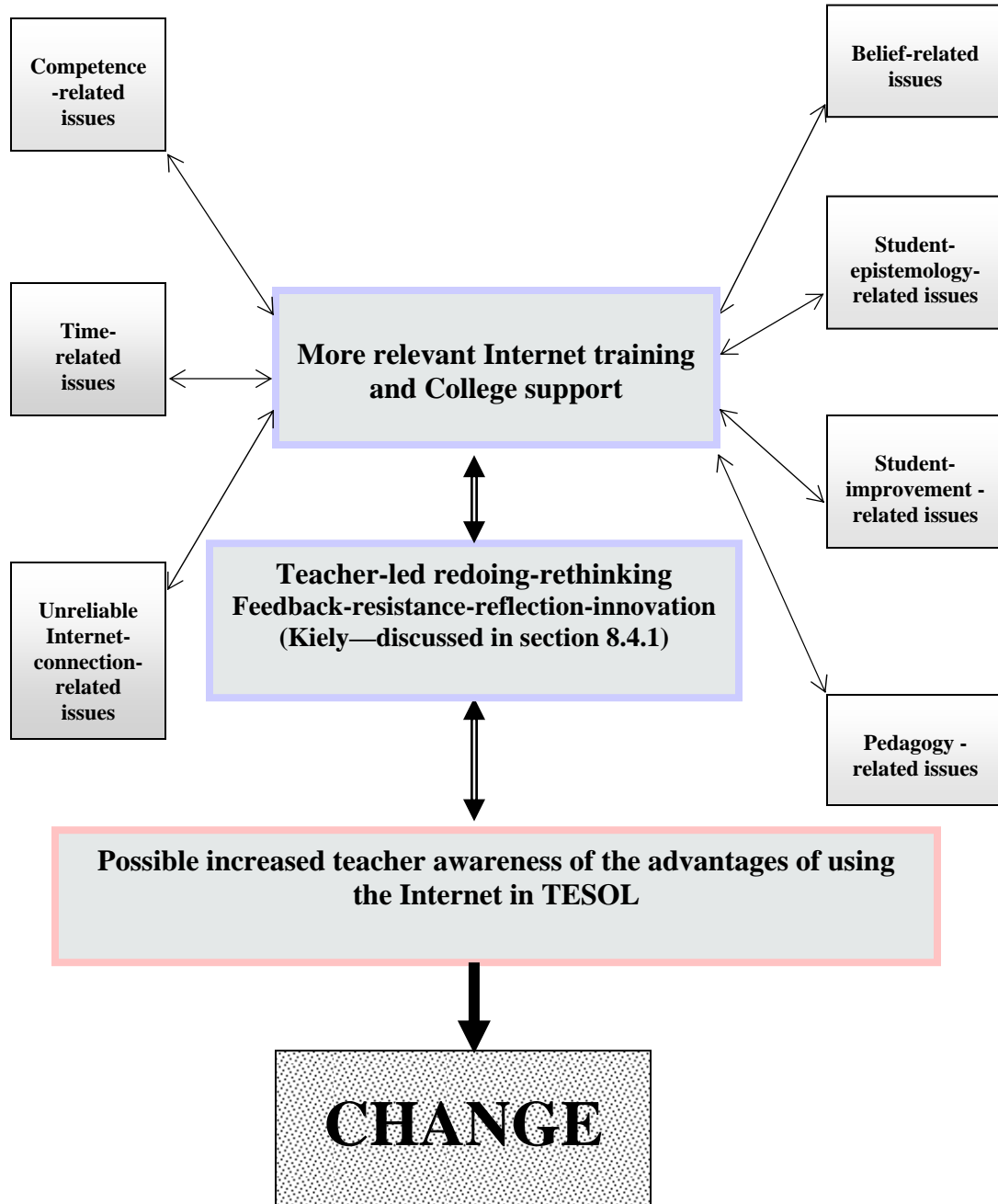
Figure 7   Issues that if addressed may precipitate the change process

8.4.1 Reflecting and innovating

In figure 7 above I suggested that change may involve training and support over a long period. The perspective Kiely (2001: 257-258)[9] provides on teacher change (teacher development) refers to linear feedback-resistance-reflection-innovation cycles. Kiely (Ibid. 257-258) maintains that 'the process of development typically involves some feedback to the teacher illustrating a problem, which creates instability in the belief system, then the teacher adapts her belief system to re-establish coherence'. He holds (Ibid. 256-258) that change as a result of the evaluation of student feedback is not immediate 'it seems to emerge after an initial expression of resistance and a period of reflection'.

In this study T4 appeared to go through cycles of development over a period of approximately eight months as her awareness of Internet-lesson pedagogy grew. Change as a result of direct student feedback was not immediate. T4 developed consistently over approximately eight months in spite of her negatively perceived student feedback. In the case of T1, T3, T5 and T6 however (i.e. based on analyses of teachers' Internet lessons), the data did not evidence reflection and innovation to any such degree. This therefore suggests that teachers might need more support and training aimed at encouraging teacher reflection and innovation. Sharing such teachers' effective lesson materials therefore may be an efficacious way to reduce long-term training and support; this is in accord with Boshuizen and Wopereis (2003, 149), Potter and Mellar (2000, 35), Coles *et al.* (2000, 173).

8.5 Student epistemologies

Students epistemologies refers to the conception of how one comes to know; students will have nurtured such a concept throughout their previous educational encounters (Laurillard, 2002: 202-3). A relevant data claim regarding epistemologies appertained to how teachers believed students had had learner expectations about how they should be taught; the germane student-epistemology issues in the study comprised:

(1)   some negative student feeling pertaining to lab-lessons not being like traditional lessons.

(2)   the need to connect Internet materials to course examinations.

The ramifications of not addressing the above points had related to some students apparently becoming concerned, critical and/or de-motivated. This observation resonates

---

[9] The paper illuminates the processes of curriculum and teacher development that followed an evaluation of a British University English for Academic Purposes programme. The evaluation was carried out by the teacher using a group discussion technique as recommended by the departmental policy for quality assurance purposes. The research data (ethnographic field notes) from classroom and interviews with the teacher and students document the change processes of rethinking core principles and teaching strategies by the teacher in relation to the teaching of vocabulary in the classroom (Kiely 2001: 241).

with Laurillard (2002: 202) who expresses the belief that students have conceptions of what learning is and how it should be done.

The key implication of the issues above is the degree to which they had been de-motivating for teachers, and the extent to which they raised awareness regarding the drawbacks of Internet use.

In figure 8 below I have presented the fundamental issues that may need to be addressed in Internet lessons with regard to student epistemologies. The hypothesis the figure puts forward is based on teacher Internet lesson analyses and relates to how certain types of Internet lesson pedagogies create epistemological problems (i.e. pedagogies that do not address 8.1.1 bullet points). The outcome of figure 8 resonates with Laurillard (2002: 202) who, with regard to the use of technology in learning, draws attention to the need to 'inculcate an appropriate conception of learning, or desirable epistemology' in the student's mind. Laurillard (2002: 203-4) maintains that a process of discussion with students about the status of knowledge, how it can be known and how it can be learned is necessary with regard to developing an appropriate epistemology. However, a concomitant of such discussion, in my opinion, is the teacher having a clear conception of how this can be done with the Internet. The analyses of teacher Internet lessons suggest that a lengthy process of reflection and innovation is necessary to develop such an understanding.

The figure also poses (i.e. as asserted in Stepp-Greany 2002: 165) the issue of the need for more research in the domain of teachers' understanding of student perceptions of language learning in an ICT setting.

```
┌─────────────────────────────────────────────────────────────────────────┐
│                Type of Internet lesson pedagogy may lead to:              │
└─────────────────────────────────────────────────────────────────────────┘
        │                   │                   │                   │
        ▼                   ▼                   ▼                   ▼
┌───────────────┐   ┌───────────────┐   ┌───────────────┐   ┌───────────────┐
│ Some student  │   │ Some student  │   │ Some student  │   │ Some student  │
│ resistance to │   │ resistance to │   │ resistance to │   │ resistance to │
│ change regarding│ │ change        │   │ change        │   │ change        │
│ not being taught│ │ regarding     │   │ regarding     │   │ regarding Internet│
│ traditionally │   │ autonomous    │   │ not making a  │   │ lessons being too│
│ and/or in a non-│ │ learning      │   │ connection with course│ │ innovative e.g.│
│ ICT environment│  │               │   │ examinations  │   │ WebQuest lessons│
└───────────────┘   └───────────────┘   └───────────────┘   └───────────────┘
        ▼                   ▼                   ▼                   ▼
┌─────────────────────────────────────────────────────────────────────────┐
│ Outcome: suitable training/support needed to raise teacher awareness regarding the │
│        importance of addressing and adapting to student-epistemologies.   │
└─────────────────────────────────────────────────────────────────────────┘
```

Figure 8   Internet pedagogy and student resistance to change

8.6   Hesitancy regarding student improvement

Teachers being hesitant about student improvement brought about by using the Internet arose as an issue in the research; moreover, as illustrated in figure 7, it had potential ramifications for change.

- **Teacher evaluation of learning**

Collated research data indicated that teachers had initially been positive about student progress during their first interview. However in subsequent interviews they appeared to have become increasingly tentative or equivocal about whether using the Internet had led to any improvements. Moreover, although there was a feeling among teachers that speaking and listening skills were substantive skills, they had not been, or apparently could not be, practised in the lab. This was perceived to be a drawback (it may have led to raised awareness of the drawbacks of Internet usage). Teachers therefore might also have been hesitant about improvement brought about by using the Internet, because they had not been conversant with methods of measuring it, that is:

(1)   In section 8.5 on student epistemologies I noted that there was teacher uncertainty about how to connect lab work with exams.

(2)   Speaking and listening skills apparently could not be/had not been practised; therefore teachers could not link any betterment in those skills to Internet lab classes.

A possible outcome of not perceiving a higher rate of language acquisition is, it increases teachers' awareness of the drawbacks of using the ESOL Internet; some literature on change maintains that teachers that perceive no improvement in pupil learning may not have positive attitudes to change (e.g. Guskey 1989: 445).

8.7   Examples of sound Internet pedagogy
(available online http://www.englishlab.intercol.edu/internetlessons/)

Plate 3 below provides a visual example of an effective Internet pedagogy for beginner-level learners (the lesson was written by T4). The comments in the text boxes are mine.

Aims are stated (i.e. to practise kitchen vocabulary) and are reflected in the materials (discussed in 8.1.1). This lesson is sent to students electronically via the management software and also given to them as a handout (as discussed in sections 8.1.1) i.e. students receive both versions during the lesson.

The lesson combines ICT and non-ICT teaching. If there is unreliable Internet connection, students can do the non-ICT exercises (discussed in sections 8.3.1)

The teacher can retain many of her traditional roles and methodologies e.g. monitor / regulate learning (section 8.1.1) or pair/group work (section 8.2). In section 8.5 on student epistemologies, I present data that suggest students wanted/expected to be taught more traditionally without being given so much autonomy.

Sites are suitable level-wise (i.e. grammar/vocabulary) and topic-wise. This issue is discussed in section 8.1.1.

The lesson has a core set of sites i.e. it does not rely on one site and/or use too many sites (discussed in sections 7.2) Moreover the lesson provides additional Internet work for students that finish earlier (section 8.1.1).

Even though the lesson is focused on vocabulary and spelling of vocabulary, pronunciation skills could be practised. Moreover, a speaking, listening, grammar and writing component could be built into the lesson. This would broaden the scope of Internet learning (sections 8.1.1).

All the vocabulary used in the ICT part is used in the non-ICT part i.e. no new vocabulary is introduced (section 8.1.1). Moreover, materials have been timed/sequenced so as to create a balance between ICT/non-ICT learning.

The sites clearly have been pre-screened so a teacher could explain to students what should be done. Pre-screening sites was discussed in sections 8.1.1 and 8.3.1.

There is a clear connection with course exam i.e. students know what words they have to learn (sections 8.5, 8.1.1); attainment may be measured (section 8.6).

ENGLISH PRACTICE IN THE KITCHEN II – Internet lesson

1. Go to the following link and try to match the words with the pictures correctly.

   http://www.eslbears.homestead.com/files/kitchen1.htm

2. Let's see how much you remember now. Write the words from the table under correct pictures.

   refrigerator, pot, electric can opener, sink, blender, cutting board, toaster, coffee maker, dishwasher, mixer, stove, frying pan, microwave oven,

3. If some of the words are still unclear, look them up in one of the following online vocabularies.

   http://www.translatum.gr/
   http://www.perseus.tufts.edu/cgi-bin/enggreek

4. Fill the blanks with suitable words.
   a. There is still a lot of soup in the p _ _.
   b. You can combine the ingredients in a b _ _ _ _ _ _.
   c. I opened the can with an electric can o _ _ _ _ _.
   d. I never liked washing up, so I bought a d _ _ _ _ _ _ _ _ _.
   e. There is a lot of dirty plates in a s _ _ _.
   f. Keep the milk in the r _ _ _ _ _ _ _ _ _ _.
   g. I chopped the onion on a c _ _ _ _ _ _ b _ _ _.
   h. Beat the yolk with a m _ _ _ _.
   i. I can't cook because I don't have a s _ _ _ _ at home.
   j. I can't make pancakes because I burnt my f _ _ _ _ _ p _ _.

5. Now, let's check how much you have learned. Do the exercise again.

   http://www.eslbears.homestead.com/files/kitchen1.htm

6. Go to the following site and try to label some kitchen equipment.

   http://www.prof2000.pt/users/tereza_n/kitchen_1.htm

7. Try to answer some of the questions about things in the kitchen.

   http://www.eslpartyland.com/news/kitchen.htm

8. Can you label the items in the picture? Use the words from the table.

   stove, oven, burner, pan, frying pan, sink, faucet, cabinet, refrigerator, freezer, plant, switch, apron, garbage can, broom,

   1. _____ 2. _____ 3. _____ 4. _____ 5. _____
   6. _____ 7. _____ 8. _____ 9. _____ 10. _____
   11. _____ 12. _____ 13. _____ 14. _____ 15. _____
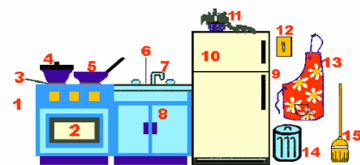
9. If there's still some time for language games, go to

   http://vocabulary.co.il/
   and

   a. Choose "MATCH GAME, then LEARN, click a right arrow to find KITCHEN, press START ....
   b. Choose "MATCH GAME, then PLAY, click a right arrow to find KITCHEN, press START
   c. Choose WORDSEARCH, then find KITCHEN and PLAY
   d. Choose HANGMAN, then find KITCHEN, press OK

   WORDS YOU HAVE TO LEARN

   refrigerator, pot, electric can opener, sink, blender, cutting board, toaster, coffee maker, dishwasher, mixer, stove, frying pan, microwave oven, stove, oven, burner, pan, frying pan, sink, faucet, cabinet, refrigerator, freezer, plant, switch, apron, garbage can, broom,

---

Plate 3   An example of sound Internet pedagogy

9   Conclusion

It is doubtful that the use of the Internet in TESOL will be a 'passing fad': it is highly likely that *things will get better*; technology use will improve as technological innovations worldwide are made. As our understanding of how to use the Internet gets better, and more research findings are disseminated, the way we use it will improve. This study therefore suggests the following substantive domains for future research.

- A key issue for future research is analysing how negative feedback and resistance might be transformed into positive reflection and innovation. T4 for instance developed innovatively her Internet pedagogy consistently over approximately eight months in spite of her negatively perceived student feedback.
- A second field concerns cataloguing ways of practising all language skills using the Internet in a lab environment. For instance the data in the research suggested that there were problems with using the Internet to practise speaking and listening skills in the lab or undertaking pair/group work activities.
- The third area concerns finding out more about how the Internet can be used in a way that reinforces existing non-ICT practice.

10.   References

Albaugh, P. (1997) The role of skepticism in preparing teachers for the use of technology. *'Education for community': a town and gown discussion panel, Westerville, OH, January 26, 1997.*

Bastid, V. (Ed.) (2002) *Can we learn digitally?* Available: http://a512.g.akamai.net/7/512/51/1fdb15b68a5920/www.apple.com/uk/education/learn_digitally/pdf/learn_digitally.pdf

BECTA (2003) *What the research says on barriers to the use of ICT in teaching.* Available: http://www.becta.org.uk/page_documents/research/wtrs_barriersinteach.pdf

Bitter, G., and Pierson, M. (1999). *Using Technology in the Classroom.* Needham Heights: Allyn and Bacon.

Borg, S. (2003) Teacher cognition in language teaching: A review of research on what language teachers think, know, believe and do. *Language Teaching,* 36: 81-109

Boshuizen, A., and Wopereis, H. (2003) Pedagogy of training in information and communications technology for teachers and beyond. *Technology, Pedagogy and Education, 12* (1): 151-161.

Coles, L., Richardson, A., and Tuson, J (2000) Integrating Information and Communications Technology in Professional Practice: an analysis of teachers' needs based on a survey of primary and secondary teachers in Scottish schools. *Journal of Information Technology for Teacher Education*, Vol. 9, No. 2: 1-16

Cox, M., and Abbott, C. (Eds.) (2004) *A review if the research literature relating to ICT and attainment.* Coventry, BECTA/ London, DfES. Available: http://www.becta.org.uk/page_documents/research/ict_pedagogy_summary.pdf

De Szendeffy (1998) *Is the Web Ready for TESL?* Available:
        http://www.bu.edu/celop/mll/call/web-tesl.html

Downes, T., Fluck, A., Gibbons, P., Leonard, R., Matthews, C., Oliver, R., Vickers, M., and Williams, M. (2001) Making better connections: Models of teacher professional development for the integration and communication technology into classroom practice. A Report to the Commonwealth Department of Education, Science and Training: Available:http://www.dest.gov.au/sectors/school_education/publications_resources/profiles/making_better_connections.htm

Frey, F. (2000) Investigating Moral Intensity with the World-Wide Web: A Look at Participant Reactions and a Comparison of Methods. *Behavior Research Methods, Instruments, and Computers*, 32 (3): 423-431.

Fullan, M. (1998). Linking change and assessment. In Rea-Dickins, P., and Germaine, K. (Eds) (1998). *Managing Evaluation and Innovation in Language Teaching: Building Bridges.* (p. 253-268). Essex: Longman.

Gobbo, C., and Giradi, M. (2001) Teachers' Beliefs and Integration of Information and Communications Technology in Italian Schools. *Journal of Information Technology for Communications Technology in Italian Schools,* Vol 10, Nos 1/2: 63-85

Godwin-Jones, B. (1999) Emerging Technologies—Web Metadata. *Language Learning and Technology*, Vol 3 No1 July 1999: 12-16.

Guha, S (2000) *Are you technically prepared? Teachers' perspectives on the causes of comfort or discomfort in using computers at elementary grade teaching.* Paper presented at the Annual Meeting of the National Association for the Education of Young Children Atlanta, GA, November 8-11, 2000.

Guskey, Thomas. (1989) Attitude and Perceptual Change in Teachers. *International Journal of Education* 13:7: 439-453

Hanson-Smith, E. (2003) *Technology in the Classroom: Practice and Promise in the 21st century.* Available:
        http://www.tesol.org/pubs/catalog/downloadable/hanson-smith-1.html

Jones, Andrew (2004) A *review of the research literature on barriers to the uptake of ICT by teachers.* Available online at DfES/BECTA. Available:
        http://www.becta.org.uk/page_documents/research/barriers.pdf

Kiely, R. (2001) Classroom evaluation – values, interests and teacher development. *Language Teaching Research* 5/3: 241–261.

Kirschner, P and Selinger, M. (2003) The State of Affairs of Teacher Education with Respect to Information and Communications Technology. *Technology, Pedagogy and Education*. Vol 12, No 1: 5-25.

Kuechler, M. (1996) *The possibilities are endless, only the pedagogical imagination of the instructor is the limit*. Available: (http://maxweber.hunter.cuny.edu/socio/facpaper/ers-mk2.htm) Morrison, S. (2002). Interactive Language Learning on the Web. *Digest.* Available: www.cal.org/resources/digest/0212morrison.html

Larner, D., and Timberlake, L. (1995). *Teachers with limited computer knowledge*:   *variables affecting use and hints to increase use.* The Curry School of Education,   University of Virginia

Laurillard, D. (2002) *Rethinking University Teaching*. London: RoutledgeFarmer.

Lee, D. (1997) Factors influencing the success of computer skills learning among in-   service   teachers. *British Journal of Educational Technology,* 28 (2): 139-141.

LeLoup, J., and Ponterio, R. (2000) Enhancing Authentic Language Learning Experiences through Internet Technology. *Digest.* Available: www.cal.org/resources/digest/0002enhancing.html

Manterach-Wigans, L., Bender, C., and Maushak, N. (1999) *Technology integration in Iowa high schools: perceptions of teachers and students.* College of Education. Iowa State University. http://www3.iptv.org/iowa_database/StarSchools/supdocs/monograph98.pdf

Morrison, S. (2002) Interactive Language Learning on the Web. *Digest.* Available: www.cal.org/resources/digest/0212morrison.html

Moseley, D., Higgins, S., Bramald, R., Hardman, F., Miller, J., Mroz, M., Tse, H., Newton, D., Thompson, I., Williamson, J., Halligan, J., Bramald, S., Newton, L. and Tymms, P. (1999), *Effective Pedagogy Using ICT For Literacy and   Numeracy in Primary Schools.* Newcastle: University of Newcastle.http://www.leeds.ac.uk/educol/documents/00001369.htm

Pina, A., Harris, B. (1993) *Increasing teachers' confidence in using computers for education.* Paper presented at the Annual Meeting of the Arizona Educational   Research   Organisation   (Tucson, AZ, November 1993).

Potter, J. and Mellar, H. (2000) Identifying Teachers' Internet Training Needs. *Journal   of Information for Teacher Education*. Vol 9, No. 1: 2000

Rakes, G., and Casey, H. (2002) An analysis of teacher concerns towards instructional technology. *International Journal of Education Technology.* 3.1: 1-12. Available: http://www.ao.uiuc.edu/ijet/v3n1/rakes/index.html

Schwienhorst, K. (1999, 4) Teacher Autonomy in Multiple-user Domains: supporting language teaching in collaborative virtual environments. *Journal of Information Technology for Teacher Education, Vol.   8,   No.   2:   1999* http://www.triangle.co.uk/pdf/viewpdf.asp?j=jit&vol=8&issue=2&year=1999&article=schwienhorst&id=194.42.22.2

Stepp-Greany, J. (2002) Student Perceptions on language learning in a technological   environment: implications for the new millennium. *Language Learning and Technology*. 6/1. 165-180. Available: http://llt.msu.edu/vol6num1/steppgreany/

Veen, W. (1993) The role of beliefs in the use of information technology: implications   for   teacher education, or teaching the right thing at the right time. *Journal of   Information   Technology for Teacher Education,* 2 (2): 139-153.

Warschauer (2003) *The Allures and Illusions of Modernity: Technology and Educational Reform in Egypt.* Available: http://epaa.asu.edu/epaa/v11n38/

Wood, Robert. (1999) Thinking About the Internet Pedagogically. *Rutgers, The State University   of   New   Jersey   Campus   at   Camden.*   Available: http://www.camden.rutgers.edu/%7Ewood/pedagogy.html

Windeatt, S., Hardisty, D., and Eastment, D. (2002) *The Internet.* Oxford: OUP

11.   Appendix 1: Key Table-1 research issues and some related literature

Research Issue	Potential interview-1 questions and related literature
General issues	• What are your views about using the Internet for teaching English in the lab? How pro/sceptical would teachers be? • Do you have any technical problems? (Jones 2004:12, Guha 2000 in BECTA 2003) • Would you like to make any comments about connection speed? Would connection speeds be too slow? (Bastid 2002) • Do you feel there is enough space in the lab?
Confidence	• To what degree do you feel confident using the Internet in the lab? What things make you less, or more, confident? Larner and Timberlake, 1995 cited in Jones, 2004:3
Competence	• To what degree do you feel competent? Gobbo and Giradi (2001:63) that levels of ICT competence play a major role in teachers' assimilation of ICT, and in their perception of their own motivation. • Do you feel you need to undergo training? If 'yes' what kind? How often? Pina and Harris (1993), and Lee (1997) in Jones (2004: 8-9) • Would you like to comment on the kind of environment Intercollege has created for Professional Development? Coles *et al*. (2000: 178) • How would you benchmark your ICT/Internet competence level? Kirschner and Selinger (2003: 16) • Have you ever used the Internet to teach English? If 'yes' discuss your experiences. • Do you feel you lack time to use the Internet in the language lab? If yes, why? Jones (2004: 3)
Time	• Do you feel the sites that have been given to you and/or the ones that you have found are sufficiently engaging for your students? LeLoup and Ponterio (2002: 3-5)
Using the Internet	• To what degree are the following issues with regard to Internet sites? (1) reliability (2) appropriateness (3) comprehensiveness (4) organisation (5) interactivity
Other issues	• Do you feel there is any institutional pressure to be seen using the use the lab? • Do you think your students are confident and/or competent users of ICT? Selinger (2001: 143) • Do you believe based on general impressions, that students have positive attitudes about using the Internet to learn/practise English?

12.   Appendix 2: Key Table-2 research issues and some related literature

Internet pedagogy issues	Potential interview-2 questions

INTERNET LESSON PLANNING ISSUES

What do teachers consider when planning an Internet lesson?

- Do you feel you need assistance in planning Internet lessons? Why?
- How much preparation time is required to prepare an Internet-lesson? Why?

Setting objectives

To what degree would teachers need guidance on how to design an Internet lesson?

- What issues do you consider are important when setting lesson objectives?
- With regard to setting lesson objectives, could you comment on meeting learner needs and fulfilling the course requirements?

Choosing materials

Bitter and Pierson (1999: 158)

- Could you comment on the need to find appropriate gender- and/or culturally sensitive Internet lesson materials?
- Could you comment on the need to find interesting/motivating Internet materials for students?
- Could you comment on the need to find suitable Internet materials that cater for your student-group learning levels and learning backgrounds?
- Could you comment on the need to find suitable Internet materials that cater for students that may not have developed IT skills?

Pre-lesson teacher preparation

- Could you comment on time to prepare a back-up lesson just in case the Internet does not work on the day of your lesson?
- Could you comment on the amount of time it might take someone to pre-screen sites before lessons to prepare fully for student questions?
- Are there any technical issues that require pre-lesson preparation e.g. saving lesson sites in the appropriate electronic format so that the files can be sent to students in the lab?

Pre-lesson student preparation

- Do you have traditional non-ICT (pre-lab) lessons before you take your students to the language lab?
- Could you comment on how time-consuming it might be to pre-teach Internet site vocabulary, background information and/or concepts, before having a lab lesson?
- Do your students need to be pre-taught some basic computer skills (i.e. the ability to open files, use the Internet)?

Putting the lesson together

- With regard to putting lesson materials together, could you comment on timing and sequencing materials?
- Do you base your Internet lessons on a language learning theory?
- Could you comment on the language focus of the interactive Internet-sites you have been using?
- What would you say about the content, lexical, and 'difficultness suitability' of the Internet sites (a) I found for you? (b) you found for yourself?
- Please comment on how the Internet lends itself to task-based learning/structural learning?
- When putting lessons together, do you consider previous lesson materials?
- Do any limitations of computer hardware or software play a role in deciding how to put lessons together?

Planning-related (continued)	• Could you comment on the need to match the level of the Internet lesson materials with the ability of your students? **Follow-up activities** • Could you comment on the need to prepare post lesson activities? • Do you have time in your lessons to question your students to see whether they are to some degree learning in lab lessons? **Making special lesson notes** • Do you make notes about things that appeared to go well or badly in your Internet lessons?
What effect would student epistemologies have on teachers?	**EPISTEMOLOGY ISSUES** (lesson planning-related) Laurillard (Ibid.202-4) • Do students have teacher and teaching expectations? If so, what implications might this have for Internet use? • Comment on how having language classes in the language lab might affect teaching and students' learning?
Do teachers consider Syllabus Design?	**SYLLABUS DESIGN ISSUES** (lesson planning-related) • What do you think the language focus of most of the interactive sites is? • Please comment on the lexical, and 'difficultness suitability' of the Internet sites that (a) I found for you (b) you have found. • Do you think the Internet lends itself well to task-based/structural learning?
Would teachers know how to measure attainment?	**IMPROVEMENT ISSUES** (belief-related) (Cox *et al*., 2004: 15). Borg (2003: 81), Moseley and Higgins *et al*. (1999: 75) • Has there been any appreciable effect on student improvement? Why/Why not? Guskey (1989: 445) Cox and Abbott *et al*. (2004) • What about improvement in traditional non-ICT teaching?
How would teachers feel about any role changes?	**ROLE ISSUES** (belief-related). Cox *et al*. (2004: 5) Jones *et al*. (2004: 5) • Do you feel your teaching role changes in the lab? • How does lab teaching/learning compare with non-lab teaching? • How autonomous do you think your learners have become as a result of your lab-lesson pedagogy?
Would any resistance to change be justified?	**CHANGE ISSUES** (belief-related) Fullan and Smith (1999: 9-13) Jones (2004: 17) Borg (2003: 91) • Do you feel ICT teaching is non-problematic or problematic? Why? • Why do you think the College decided to invest in a language lab? • How do think using the lab affects your student evaluations?

WOULD BELIEFS/ATTITUDES CHANGE? WHY?