Students' use of Portable Electronic Dictionaries in the EFL/ESL Classroom; A Survey of Teacher Attitudes.

A dissertation submitted in part fulfilment of the requirements for the degree of Master in Education in the Faculty of Education.

2005

Vivian Midlane

Language and Literacy Studies in Education
The University of Manchester

Students' use of Portable Electronic Dictionaries in the EFL/ESL Classroom; a Survey of Teacher Attitudes.

Contents

List of charts and tables

Charts

Tables

Appendix

Acknowledgements

Thanks are due to:

all the teachers around the world who took time to complete the questionnaire; my supervisor at Manchester University Department of Language and Literacy Studies, Diane Slaouti; tutors Dr Richard Fay, Gary Motteram, Mike Beaumont (and all the other members of the *Hard Times Orkestra)* and Justin Mellersh; the many EFL people who gave help and advice, including Dr Hilary Nesi at the University of Warwick and Dr Jane Sunderland of the University of Lancaster; Fiona Hanratty at the British Council; my students on the Diploma in Management and English course at the University of Salford for being good-humoured Guinea Pigs, and my wife Sue Midlane for everything.

"the teacher does not always have to be more knowledgeable than the pupil; and the pupil is not necessarily always less learned than the teacher".

K'ung-fu-tzu (Confucius), 551-479 BC.

List of Abbreviations used.

AmE. American English.

BrE. British English.

CALL. Computer Assisted Language Learning.

CELTA and DELTA. Certificate in English Language Teaching to Adults; Diploma in English Language Teaching to Adults.

EAP. English for Academic Purposes.

EFL. English as a Foreign Language.

ELT. English Language Teaching.

ESL. English as a Second Language.

HTML. Hypertext markup language.

IPA.. International Phonetic Alphabet.

IATEFL. International Association of Teachers of English as a Foreign Language.

L1. First Language.

L2. Second language.

LAN. Local Area Network.

PAD. Phonetically-Accessed Dictionary.

PED. Portable Electronic Dictionary.

SLA. Second Language Acquisition.

TESOL. Teaching English to Speakers of Other Languages.

URL. Universal Resource Locator.

Students' use of Portable Electronic Dictionaries in the EFL/ESL Classroom; a Survey of Teacher Attitudes.

Chapter 1 Introduction.

1. Introduction

This study examines students' use of Portable Electronic Dictionaries (hereafter PEDs) in the English Language Classroom, and EFL/ESL teachers' attitudes towards such usage.

The study was inspired by the writer's perception, based on working as an English Language Teacher in a variety of contexts, that many EFL practitioners disliked or mistrusted PEDs, and felt unhappy with students using them in class. In one UK Further Education College where the writer has worked, PED use is formally banned in class. At this institution the same rule bans students' use of mobile phones in class, suggesting that PEDs are seen by college staff as having the same status as phones in being distractions which offer students the opportunity to disengage with the work of the class. In conversations with other teachers the writer felt that the predominant view of PEDs was a negative one. At the same time, however, the use of conventional paper-based dictionaries is seen to be something to encourage. The perception seemed almost to be that a student who brought a PED to class was open to being distracted, while bringing a paper-dictionary to class was the mark of a Good Language Learner (Naiman et al, 1978).

This study seeks to examine the validity of the writer's perception that there is a gap in teachers' acceptance of paper-based and Portable Electronic Dictionaries, and to ask whether there is something in the nature of how students use PEDs, or in the architecture of the devices themselves, that leads to this being so. It also seeks to ask whether teachers are justified in questioning students' regular use of

PEDs, and whether PED usage, particularly where students may not have been likely to use a paper-based dictionary in the same context, may have a beneficial effect on language acquisition, especially in terms of vocabulary learning. Intuition suggests, in fact, that the number of learners who own and use bilingual dictionaries would far outweigh the number with monolingual dictionaries and that some learners may only encounter monolingual dictionaries in teacher-directed classroom activities.

The writer's recent teaching experience has been in the UK; the survey on which this study is based has been designed to obtain as broad a spectrum of teacher opinion as possible, and has been opened to a global population of respondents.

As such, the major research questions that this study will seek to examine are:

- Do EFL/ESL teachers have predominantly negative views on PED use in their classrooms, what are the reasons for this, and can they be justified?
- Are there significant differences between what PEDs and paper-dictionary usage brings to the classroom experience?
- Do PED have any effects, either beneficial or detrimental, on language acquisition and learning?

In order to illustrate this question, the study opens with a survey of relevant literature. Beginning with a discussion of three papers specifically examining issues of PED use, the survey will then open out into wider contexts of pedagogy and, to a lesser extent, the lexicography of learner dictionaries.

Following a description of the methodology used, an analysis of the survey data

collected is presented and this is followed by a discussion of the findings, a

conclusion and recommendations for further research.

Chapter 2 The Portable Electronic Dictionary – definition and history.

2. The Portable Electronic Dictionary – definition and history

Portable Electronic Dictionaries are pocket-sized devices which can easily be carried by students for use in the classroom or for providing day-to-day language support and translation. Similar in appearance to a Personal Data Assistant or a large pocket calculator, PEDs feature a keyboard (generally QWERTY-based) with function keys, and a small display screen in a hinged lid. Most models offer an audible pronunciation option allowing students to hear the word they have looked up, while newer models may offer pen entry character-recognition input. These are especially aimed at speakers and learners of character-based East Asian languages, and may offer character to sound options (Siu 2004). The PEDs discussed in this study offer bilingual dictionary functioning; many can also be used in monolingual mode.

While the earliest devices that could be described as Portable Electronic Dictionaries date back to the 1970s (Garfield 1979) it is only in the last decade that they have made their presence felt in the classroom. The first registered US patent for a Portable Electronic Dictionary was filed in 1980 by the Japanese company Sharp Kabushiki Kaisha. (US Patent 4438505, 1984), but the PED may be seen as having its origins in the original proposal for the Dynabook electronic book made by Alan Kay in 1968. The first commercially available PEDs were manufactured by Franklin Electronic Publishers, with the first product being marketed in 1986 (Wilson, 2001). They began to make their presence felt in the

EFL/ESL classroom in the 1990s, (Tang 1996, Stirling 2003) as prices fell with a widening generic manufacturing base, and functionality improved.

PEDs are not the only form of technology-based dictionary. IT-literate students are likely to use internet-based dictionaries such as the Oxford English Dictionary or Merriam Webster Online, or use an online service such as Onelook which looks up an item across a range of online dictionaries and provides a digest of retrieved definitions. Nesi (2003) found that Chinese students made very extensive use of a PC-based Dictionary and translation package called *Jin Shan Ci Ba* (also known as *Kingsoft Powerword*) which is bundled with many computers sold in China. Nesi found that *Jin Shan Ci Ba* contained significant numbers of non- standard words, and suggests this may be due to a tendency of Chinese lexicographers to over apply word transformation rules, making a noun for every verb or a verb for every adjective (and Swan & Smith 1997).

Less commonly recently with the exponential growth of the Internet as the service provider of choice, students may use CD-ROM Dictionaries or locally based systems available across a LAN or their institution's intranet.

What sets PEDs apart from online or CD-ROM based dictionaries is their portability; while other electronic dictionaries can only be accessed from a computer terminal, PEDs can be carried into the classroom. If a teacher wants to make use of other forms of electronic dictionary with a class, it is likely that this will need to be done in a computer laboratory. However, the choice as to whether to bring a PED to class or not remains with the student. How this

impacts on pedagogy, and, to a lesser extent, classroom management, is the focus

of interest of this study.

Students' use of Portable Electronic Dictionaries in the EFL/ESL Classroom; a Survey of Teacher Attitudes.

Chapter 3 - Contexts: Dictionaries, vocabulary and the Good Language Learner; a review of previous studies.

3. Contexts: Dictionaries, vocabulary and the Good Language Learner; a review of previous studies.

Very little has been published on students' use of Portable Electronic Dictionaries, or on teachers' attitudes towards such usage (Tang 1997). Three papers which do discuss PEDs are Nesi (2003 – forthcoming), Stirling (2003) and Tang (1997). A discussion of these three papers follows.

Rather more has been written on the general use of other forms of Electronic Dictionary such as online or CD-ROM based systems, and the opportunities they provide to monitor students' patterns of dictionary use. This chapter seeks to examine some of the contexts relevant to a study of PED usage. Following discussion of the Nesi, Stirling and Tang papers it goes on to examine issues around use of bilingual against monolingual dictionaries; students' preferences in using Electronic or paper-based dictionaries; dictionaries, learning strategies and the Good Language Learner, and the value of classroom student training in dictionary use. The chapter continues to examine the question "what would you want in an ideal PED?" based on the writing of a number of ELT and Second Language Acquisition theorists, and finally looks at the evidence as to which student groups predominantly use PEDs.

3.1. Three papers – Nesi, Stirling and Tang

3.1.1. Nesi on Electronic Dictionaries and vocabulary

Hillary Nesi's paper, *The virtual vocabulary notebook: the electronic dictionary as vocabulary learning tool* provides a marker of the significant difference between PC-based Electronic Dictionaries, which researchers have chosen to use in examining students patterns of dictionary usage, and students' increasing actual preference for the use of PEDs. Nesi began her study by looking at the CD-ROM edition of the Macmillan English Dictionary, and how its annotation facilities, and the ability it provides for students to create their own word lists, could be used in a teaching environment where students are given training and encouragement to create vocabulary notebooks. However, while the students in her study reacted very favourably to their use of the Macmillan Dictionary, her questionnaire quickly revealed their actual preference for the use of bilingual electronic dictionaries, and in particular PEDs:

"The questionnaire results revealed that the Chinese students were very dependent on PEDs and bilingual dictionary software, so individualised questionnaires were sent to the undergraduate group to gather further information … of the 26 students who owned a bilingual e-dictionary (almost all the Chinese and Japanese students), 23 claimed to use it daily." – (Nesi 2003).

As the quotation points out, Nesi also noted the particular preference that

students from East Asian countries have for PED use.

Noting this preference for the use of PEDs, Nesi went on to distribute a

questionnaire amongst 14 of her Chinese students. She found that they

had little knowledge of the lexicographic content of their PEDs, and were

more likely to be enthusiastic about the devices' inclusion of extras such

as calculators and address lists. However, they also stressed the

importance of portability as being a major advantage which PEDs have

over other forms of electronic, and indeed paper-based, dictionary.

Nesi's questionnaire asked students to list features of their PEDs, as set

out in the table below:

Features of pocket electronic dictionaries		
	Yes	**No**
Voice pronunciation	7	3
Recording and playback of pronunciation	4	10
Annotation of entries	4	10
Addition of new words and translations	2	12
Wordlist creation	3	11
Vocabulary tests	11	3
Games to practice English	12	2

Table 1 – Features of PEDs (adapted from Nesi 2003).

Stirling (2003) also found that 9 out the 11 PEDs she examined had some

sort of facility for annotation. The features recorded in Nesi's survey

could be useful tools for a strategy-aware learner and are open to

exploitation by EFL/ESL teachers. Teachers may need to become more

aware of what PEDs can actually do in order to realize the devices' full potential: as Nesi points out: "we should learn more about our students' dictionary-using habits and preferences, and more about the contents of the dictionaries they use".

Nesi moves on to discuss the use of the software-based *Jin Shan Ci Ba* dictionary package, which is bundled with computers sold in China. In a parallel with the discussion of PED use, she found that while this software package is a very extensively used, there is a total lack of awareness of it in the ELT literature. Reliance on usage of *Jin Shan Ci Ba* may well be responsible for many of the marked usages that appear in Chinese students' written work. If there is a general perception amongst teachers of Chinese students that PEDs are responsible for producing the inaccurate translations found in written work completed outside the classroom, it seems quite possible that the source of such inaccuracies is actually *Jin Shan Ci Ba,* rather than the PEDs with which teachers are more familiar. Finally, in her discussion of *Jin Shan Ci Ba* Nesi notes an issue which may be common to all forms of bilingual dictionary, that they "encourage the belief that there are constant one-to-one equivalencies between" [L1] "and English words".

3.1.2. Stirling on The PED in the Classroom

Johanna Stirling's web-published paper, *The Portable Electronic Dictionary: Faithful Friend or Faceless Foe?* explicitly examines teachers' and students' attitudes to the use of PEDs in the classroom. Stirling uses accounts of classroom transactions to give examples of the very well-grounded reservations teachers may have about the use of PEDs in their classrooms. In her three examples, students use PEDs rather than listening to the teacher's explicit definition of the word as it has appeared in a specific context; lose touch with a task in which other students are participating by using up the allotted time looking for irrelevant lexis in their PED; and find a totally inappropriate definition for a given headword that has come up in class rather that asking for their teacher's assistance.

Stirling feels that "the speed and ease of use of PEDs … encourage overuse". It also seems likely that there is something inherent in PEDs themselves that makes students find them pleasurable to use and leads to overuse; this could be the fascination for using a technology-based item, or what could be described as the 'small object of desire' factor.

Stirling conducted a survey of eleven teachers and eleven students (as with Nesi's research, this seems a small sample) and asked them for their opinions on the advantages and disadvantages of using PEDs. The results are set out below:

	Advantages	Disadvantages
Students	• speed(10) • ease of use (8) • size (6) • opportunity to hear words pronounced (2) • storage facility for recent look-ups	• no English-English dictionary (3) • insufficient examples • over-simplified explanations, • too many choices of meanings per word • unclear sound • too many useless features (2)
Teachers	• speed (6) • students' feeling of security in seeing translations (2) • fostering of independence (2). • possible encouragement of more general dictionary use (1) • "better than nothing" (1)	• distraction from class (6) • noise (4) • inaccurate meanings (3) • insufficient examples (3) • unintelligible pronunciation (3) • students' over-reliance on them and consequent unwillingness to discuss vocabulary (2) • lack of collocations • excess of meanings • absence of improvements seen in other dictionaries.

Table 2 – Students and Teachers views on advantages and disadvantages of PEDs (Adapted from Stirling, 2003).

Tang (1997) found a similar range of advantages cited by students, including portability, speed, range of features and the availability of sound. However, her students were not aware of disadvantages with PED use.

Predictably, the teachers' responses in Stirling's survey focus on pedagogic and lexicographic features, while the students are interested in technological and ergonomic features. Like the students in Nesi's sample, Stirling's interviewees place portability high in the list of PED advantages; in contrast with Nesi's group they are not impressed by peripheral extra features their PEDs may possess. The Stirling teacher group, questioned in 2003, can find only five advantages for PEDs against nine disadvantages, and even here two of the quoted 'advantages', "possible encouragement of more general dictionary use" and "better than nothing" are hardly deserving of the term.

Stirling quotes the Weschler and Pitts (2000) study on speed of use of PEDs, pointing out that if PEDs tend to be more likely than paper-based dictionaries to encourage off-task look-ups, at least these consultations are faster. However, she makes an extremely useful point about how the look-up process in a PED may contrast with that of the paper based dictionary in its effectiveness as a learning opportunity. Stirling describes a six stage process involving noticing a word, memorising its spelling and encoding it, searching for it sequentially by alphabetical entry, and reading the definition and rejecting other headwords, as against

a four stage simplified process for PED look-up. Here the increased complexity of paper-based dictionary look-up has a positive role to play in the learning process, fixing the new lexical item in the learner's memory. As an example, the fact that entries are arranged in a PED or other electronic dictionary non-sequentially, seen by many writers as an advantage, may be one of a number of features that by making PED look-ups too easy could be seen as barriers to effective vocabulary learning. Stirling says "unlike the learner using the PED, the student with the paper dictionary needs to engage with the English word. This deeper processing is more likely to fix the lexical item into the student's brain" and she goes on to quote Schmitt and McCarthy (1997) as writing

"the more cognitive energy a person expends when manipulating and thinking about a word, the more likely it is that they will be able to recall and use it later…. learning strategies which involve deeper engagement with words should lead to higher retention than 'shallower' activities."

One respondent to the questionnaire in the current study felt that this line of argument could be extended to any dictionary use, writing:

"Any classroom dependence on dictionaries by students reduces the motivational imperative of the student to make an effort to search for meaning from contextual clues and to listen to classroom discussion aimed at working out meaning".

Stirling's findings in patterns of PED usage with students living outside of an L1 environment contrast strongly with Weschler and Pitts (2000) study of Japanese students living in Japan. Stirling found that 50% of her student sample used their PED while traveling (Weschler and Pitts' students claimed not to do this at all), 40% while chatting in English and out of class, and 20% in day to day activities such as shopping. That 40% said they used their PED in conversations out of class - and it seems reasonable to guess that many of these conversations are with classmates where English is the only common language - is interesting. While many teachers feel that holding up conversation while a dictionary is consulted is a barrier to communication, the writer's field notes contain an example of what could be called 'social use' of a PED, where several students engaged in an EAP writing activity shared the same device, working collaboratively to ask each other about definitions and check understanding. To some extent, PEDs are still a novelty, and represent conversation pieces in much the same way that mobile phones did four or five years ago. In fact Stirling draws a very useful parallel on the status of PEDs as relatively new technology between their current place in classrooms and that of pocket calculators when they were first introduced. She feels that teachers should exploit students' enthusiasm for using PEDs outside the classroom, and that where students are studying in a target-language environment, this offers great opportunities for vocabulary building.

Like Nesi, Stirling finds that it is East Asian students who are most likely to own and use PEDs. She goes on to quote Swan and Smith (2001) in suggesting that this may reflect upbringing in an educational culture which stresses accuracy over risk-taking. She suggests that students may gain some feeling of emotional security by taking PEDs into the classroom, describing them as 'a security blanket'. She goes on to say:

"Remember that the PED is more than just a machine to some students, it is a comforting link to their own language, an umbilical cord to their mother tongue. It may be that the affective benefits are even greater than the linguistic ones that the machine offers".

Tang (1997) also comments on this emotional attachment, quoting one student interviewee as describing PEDs as "the student's best friend", while another "felt lost when his [P]ED was down". However, this comment may reflect a change in lifestyle to becoming over-dependent on technological aids, which may be familiar to many personal computer users, as much as an emotional attachment to the device. Laufer and Kimmel (1997) extend this idea, suggesting that a sense of security is provided by accessing a translation into L1.

Again like Nesi, Stirling points out that constant use of PEDs, or any other form of bilingual dictionary, encourages a belief that there is always a direct semantic correlation between lexical items in L1 and the target language. Noting that students' habits of overuse of PEDs may militate against teachers' attempts to persuade them that 'knowing' every word in

a text is not necessary for understanding, Stirling also calls for learners to be trained in effective dictionary use, in particular in developing tolerance for unknown vocabulary. A further point that could be made on overuse is simply that by looking up each and every unknown lexical item they encounter, students are overloading themselves with an unachievable learning burden. However, as Stirling points out, it is the students rather than their teacher who are choosing to use PEDs to look up given vocabulary items. While some teachers may feel that this represents a growth of student autonomy within their classrooms, many will feel that student overuse of PEDs can regularly lead to a loss of focus in class activities. This diversity of opinion is reflected in the extremes of teacher attitude quoted by Stirling, which ranged from '"Great to see students using dictionaries independently" to "I won't have them anywhere near my classroom"'. Such an attitude should possibly be seen in the light of the fact that students may be seen to be using their PEDs at the same time as the teacher is glossing a word, and that the teacher may see this as an indication that the student places greater faith in the accuracy of the PED definition than the one they, the teacher, are giving. Stirling notes significantly, however, that not all students who own PEDs overuse them in the classroom, and that patterns of usage vary considerably.

Stirling briefly mentions an issue which is likely to be a major concern of many teachers faced with the students' spontaneous use of bilingual dictionaries, that they introduce translation into 'direct method', and often multilingual, classes where teachers are attempting to train their learners to think and function in the target language without constant re-reference

to L1. She points out that PED use "makes students mentally switch codes and, in my experience, introduces more L1 interference into their writing" and echoing Nesi's discussion of *Jin Shan Ci Ba,* that "using an electronic translator for encoding (writing and speaking) can lead to inaccurate, archaic and sometimes comical results". However, Stirling also found that many of the PEDs her study sample used were actually 'bilingualised'; hybrid devices which rather than just offering a simple and straightforward translation of the English word into L1, also gave a definition and/or synonyms in English. She found that in classroom experiments users of bilingualised PEDs performed better in tests based round concept questions than students using purely bilingual devices. This was echoed by one of the current study questionnaire respondents based in Japan, who found bilingualised PEDs to be far more useful learning tools than monolingual or bilingual devices. Laufer and Kimmel (1997), meanwhile, conducted experiments using paper-based bilingual, monolingual and bilingualised dictionaries which found that the best scores in a variety of tasks were always obtained by students using bilingualised dictionaries.

Neither Stirling nor Nesi make much of the distinction between students' use of dictionaries for encoding rather than decoding. However, it seems to be explicit from their writing and from evidence from this study's questionnaire and the writer's personal experience that students use bilingual dictionaries for both tasks, but are likely to only use monolingual dictionaries for decoding. McCarthy (1990), suggests "the ideal learners' dictionary should give a sufficiently clear explanation not

only for learners to decode meaning but also to encode without error.

This is probably an impossible task …"

Stirling discusses the features which a teacher would recommend if a student were to ask for advice on buying a PED. While this is laudable, it is unlikely that this would happen in the target language environment her research is based on. PEDs can be most easily bought in the countries where the students' L1 is spoken; where students come to the UK, the US or Australia to study they are likely to bring their PEDs from home, not expect to be able to buy them in country (although Tang [1997] found some students in her study group had bought PEDs since arriving in Canada to study). Advertising in L1, meanwhile, may be inaccessible to teachers. To some extent, learners may see possession and selection of a PED as being outside the teacher's domain.

Stirling ends with advice to teachers to limit overuse of PEDs, especially where the teacher is already explaining a given vocabulary item to the class, and to become more familiar with how the devices work. This lack of familiarity may be at the root of some teachers' anxiety about PED use.

3.1.3. Tang on PED strategies

Gloria Tang's *Pocket Electronic Dictionaries for Second Language Learning: Help or Hindrance* is a pragmatic paper based on extensive classroom observation and research. Writing in 1997, Tang points out that PEDs are already being viewed with concern by English Language

teachers, and that while this concern may be routed in the deep seated belief that translation into L1 should not have a place in the EFL/ESL classroom, it may also be based on teachers' lack of awareness of how PEDs work. The questionnaire used in the current study suggests that in 2005 these same two reservations still apply. The spread of PEDs since Tang's Paper was published is indicated by her reference to research by Taylor (1996) who found that 20% of secondary school teachers in Hong Kong reported use of PEDs amongst their students and that 19 out of 26 university instructors (73%) reported undergraduate students using PEDs. In the current study 100% of teacher respondents from China (Hong Kong was not included as a separate territory option on the questionnaire) reported that students used PEDs in their classes. Another factor which has certainly changed since Tang's study is the cost of PEDs. She quotes costs of $400.00 to $1,000.00 Canadian (£170.00 to £420.00 at current exchange rates). Field interviews with students at Salford University suggest that usable devices can be bought for far less than this, although the top range model demonstrated by one of the writers' students cost the equivalent of £100.00 in Taiwan. As with any other new technology, falling purchase prices have significant implications for the democratisation of access, and will certainly have led to far greater numbers of PEDs finding their way into the classroom of 2005.

There is some suggestion that the lexicographic content of PEDs has also improved since Tang published her study. She evaluates the PEDs she

examines against a ten point criteria list for a good learners dictionary,

based on work by Hartmann (1992):

1. Wordlist selected according to criteria of frequency and usefulness;

2. Definitions geared to the more limited vocabulary of the foreign [sic] learner;

3. Different senses of the headword clearly discriminated;

4. Collocation detail is provided by example sentences;

5. Grammatical coding is detailed and explicit;

6. Phonetic transcription is international;

7. Stylistic information is given typically by usage labels;

8. Textual transparency is considered desirable;

9. Historical-etymological information is avoided;

10. Cultural information is (occasionally) provided, for example, by pictures.

Tang found that the models of PED she examined conformed to few of

these criteria, but it seems likely that 2005 devices would pass more of

them, although Number 8 'textual transparency is considered desirable'

seems rather vague and unquantifiable. Number10, looking at cultural

information, may make Hartmann's work rather of its time, given the

emphasis in current debate on English's status as a Global Language

(Crystal 1997), divorced from any particular national or ethnographic

heritage. The suggestion of use of pictures is still current, with 10

questionnaire respondents considering it a feature they would like to see in PEDs - in fact the writer has seen more than one current PED which features pictures, together with animations to illustrate verb meanings. However, many of the criticisms Tang makes, including the lack of collocational information, and the inconsistency in provision of example sentences, are echoed by the descriptions of PEDs given by respondents to the current questionnaire.

Tang's study was based on secondary level ESL students at three schools in Vancouver, and looked exclusively at the usage of PEDs by Chinese speaking students. She reports that the student enrolment of at least one of the schools includes students from other Asian countries such as Korea and Vietnam, but makes it explicit that she wanted to work with Chinese speakers because of the insight provided by her own language abilities. While this may be seen as limiting the study's global applicability, the current survey shows that speakers of Chinese languages are by far the largest linguistic group to use PEDs worldwide. Furthermore, the writers' recent field observations have all been done in classes where PEDs are exclusively used by Chinese speakers (either from the People's Republic of China or Taiwan), although he has previously encountered Arabic, Japanese and Korean students bringing PEDs to class. Tang's status as a speaker of the students' languages allows her to, for example, discuss the different operation of PEDs aimed at either Cantonese or Mandarin speakers, and examine the orthographic implications for Chinese character entry during look-ups. She found a correlation

between students' successful use of PEDs and their level of L1 literacy. Given the complexity of Chinese character-based orthography, this is possibly a correlation which might not map easily on to other language speaker groups.

Tang also feels that there is a cultural dimension to students using PEDs to a level which some teachers may consider overuse. She considers that to these students, learning a language is "synonymous with acquiring as large a vocabulary as possible … or attaining literacy", and that to them 'knowing a word' meant being able to translate it into Chinese. It could certainly be argued that these beliefs are not unique to secondary-level Chinese students studying in Canada. However, Tang found that for these students, encountering a text containing unknown words, finding translations of the individual words was of far more importance then making sense of the passage as a whole.

Given the different emphasis of her research, Tang recorded students using a different set of features in the PEDs she examined than those discussed by Nesi. These included bilingual dictionaries and idiomatic reference material, but also an 'English roots' section containing entries on English names, prefixes and suffixes; a phonetic drills section offering practice at a segmental pronunciation level; noun lists; travel dialogue; a 'listening and learning' section; and a sentence making option offering jumbled sentences with answers, as well as help sections and the usual options such as calculator, diary, notebook, organizer, and games. Unlike

Nesi, Tang's research was not aimed at investigating the annotation options of the PEDs she examined, although she does record some students keeping rather disorganized paper vocabulary notebooks based on PED look ups.

Tang quotes research by Gu (1994) which indicated that weaker students are likely to look up more words in a text than stronger students. Gu's work was based on think-aloud techniques with students using paper dictionaries. What may have changed with the emergence of PEDs is that more students bring PEDs to class than ever brought paper dictionaries, possibly for entirely non-linguistic reasons such as the status that can be acquired in the eyes of one's peers by having the latest electronic device. (Tang's teacher respondents felt this was a problematic issue). This means that weaker students may now be more likely to have access to dictionaries on their desks in class than was the case in the past.

Tang is the only writer surveyed who looked at how students used PEDs via classroom observation rather than questionnaires or interviews, and found that reading and listening comprehensions were the tasks where they were most likely to be consulted. This contrasts strongly with the findings of Nesi, who writes that students were unlikely to use PEDs for listening tasks, and that the division of skills was between reading and writing, where they were likely to be consulted, and speaking and listening, where they were not. For students in Tang's study group English-Chinese look-ups to help in decoding a text were significantly

more successful than Chinese-English look-ups intended to find an appropriate word during a writing activity.

Looking up grammatical information was seen by students in Tang's study group as being an essential part of PED usage. They felt that knowing a word's part of speech, in particular, was an essential part of decoding it or decided on its appropriacy. However, only 20% of the students in the sample understood all the abbreviations that dictionaries used to define parts of speech.

Eighty-five percent of Tang's sample used their PEDs to check pronunciation. She found that not only audible pronunciation functions were used, but that many students consulted the phonetic transcriptions given, and sometimes copied them into their vocabulary notebooks. However, the students were rarely able to read these transcriptions back accurately.

Tang identifies back translation as a strategy used by many students in the study group. The writer has developed the following technique for vocabulary look-ups with his predominantly Chinese-speaking classes, attempting to exploit the fact that only an outright ban on PED use will stop students using bilingual functions:

New word is encountered.	→	Student finds translation in L1.	→	Teacher asks student to gloss word for group *in English.*
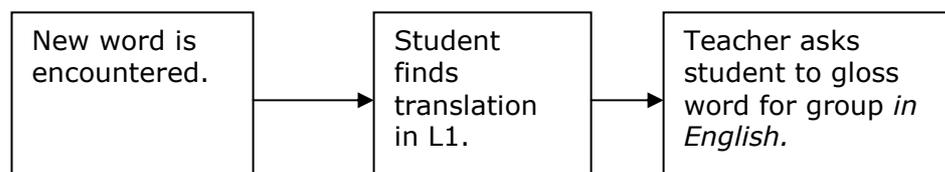
Tang goes on to examine and map the processes involved in a dictionary

consultation, contrasting the procedures of weaker and stronger students.

For the stronger students Tang identifies a six stage look-up process.

This tends to suggest that the look-up process may be more complex than

Stirling (2003) found, and rather undermines the theory that the more

complex processes involved in look-ups in paper dictionaries are more

likely to fix a word in a student's memory and result in long-term

learning.

Tang's analysis of teachers' opinions on the advantages and

disadvantages of PEDs includes significant parallels with the work of

Stirling six years later. Both recorded speed of look up to be an advantage

of PED use – Tang reports that 20% of her respondents thought this was

important. Tang records 40% of respondents thought 'confidence' was

important, while Stirling's study group talk about 'students feeling of

security in seeing translations', and 'fostering of independence'.

However, while 20% of Tang's group go on to detail the advantages of

PED use in content learning; this is not part of the rather negative

discourse of Stirling's teacher group. This does not stop Tang's group

from criticizing PEDs for 'odd usage' (80%) incomplete entries (10%)

and incorrect entries (20%).

There are also parallels between the findings of Tang and Stirling when it

comes to the disadvantages teachers recorded. In Tang's group, 10% of

the respondents considered PED use to be 'antisocial', while 54% of Stirling's group considered it to be a 'distraction from class', and 36% mentioned noise as being a problem. Both authors found over-reliance to be an issue; Tang's teacher group extended this to 'not willing to take risks', and Stirling's to 'consequent unwillingness to discuss vocabulary'. Both researchers listed the poor quality of pronunciation as being a disadvantage, Tang's group (60%) calling it 'artificial' and Stirling's 'unintelligible'.

Interestingly, Tang's respondents added 'status symbol' to their list of disadvantages. However, her sample is of secondary level school students, where discipline problems arising from class rivalries may be an issue that is irrelevant to the University level teachers surveyed in Stirling and Nesi's studies. In fact, the age of Tang's participants, some as young as 13, adds an additional dimension to her study. In a similar way, 10% of Tang's teacher group record 'pass [P]ED around' as being a *disadvantage*; field notes by this writer include an example of collaborative use of a PED during a group task which he felt enhanced learning and was worthy of further research and experiment. Tang also records her teacher respondents mentioning that the high cost of PEDs is a problem; by Stirling's study in 2003 prices have dropped and in 2005 this is no longer a significant issue, although as Tang points out, PEDs are still a target for thieves.

In conclusion, Tang feels that there are some contexts in which students' use of PEDs should be discouraged; here she parts company with Stirling who merely feels that students should be told not to use their PEDs during specific classroom activities. Like both Nesi and Stirling, Tang concludes that the way forward for teachers lies in expanding their own knowledge of how PEDs work and what they do, and in effective dictionary training work which can exploit the PED's potential as a learning tool. A significant finding in Tang's paper is that using a PED does constitute a linguistic processing task of the sort that can lead to language acquisition. Tang found students in her study group:

"did interact with the text and look for contextual clues as best they could. Only they needed the [P]ED, or any bilingual dictionary, to make that necessary link before they could do the linguistic processing and the guessing. Maybe it was the [P]ED or other bilingual dictionary that forced the students back to the text".

Tang ends by recommending that teachers discuss PED use with their classes. Sadly, there was only limited evidence from responses in the current survey that this is being done.

3.2. Contexts

The following section moves on from the discussion of papers dealing specifically with PEDs to look at some wider contexts around their use in

class. The section includes discussion of research based around student use of paper dictionaries in class, and research with other forms of electronic dictionary.

3.2.1. Bilingual and monolingual dictionaries

Tang, Nesi and Stirling all found that the predominant student usage of PEDs was in bilingual mode. This has clear implications for classrooms where the teacher has concerns about the use of translation into L1 based on pedagogical or SLA issues.

Laufer and Hill, in their paper *What lexical information do L2 learners select in a CALL Dictionary and how does it affect Word Retention?* (2000), point out that "different people, when given the choice, consult different types of dictionary information …Some prefer translations, some explanation in L2, others a mixture, and some access different information for different words." While this is may be true, it is open to question what proportion of the generality of language learners, both inside and outside of the EFL/ESL community, actually own and make use of monolingual dictionaries in the target language, be they learner dictionaries such as Longman Dictionary of Contemporary English (LDOC) or dictionaries such as Larousse which are published for a native audience. Nesi (2003) found an overwhelming preference for the use of bilingual electronic dictionaries over monolingual book dictionaries amongst her sample of 35 students studying at a University in the UK, while Laufer and Kimmel (1997) surveyed a number of empirical studies

indicating students overall preference for bilingual dictionaries. Teachers may overlook the fact that while monolingual dictionaries contain all the information for a given headword that they feel the student needs, this may actually be overburdening the student with excess information. However, Laufer and Kimmel's survey suggested that learners were aware that Monolingual Dictionaries were of more help to them, but still preferred bilingual ones (also similar findings by Tomaszczyk 1979 in Schmitt in Schmitt and McCarthy 1997).

3.2.2. Student motivation in using PEDs and other forms of Electronic Dictionary

Laufer and Hill's paper aims to discuss how computer-terminal based dictionaries can be used to log and track exactly which items students look up, a monitoring activity which would probably be impossible with students using PEDs. They go on to quote research by Roby (1991 and 1999) which found that "[students] who used an electronic dictionary looked up significantly more words than those who used a paper dictionary". This seems evidently true for students with PEDs, who, among their core language groups, far outnumber those who bring paper dictionaries to class and appear in some cases eager to use their PEDs to the extent of looking for an excuse to do so. They go on to make this point about the relative ease of use of PEDs and paper dictionaries:

"studies show that L2 readers often decide not to use the dictionary when meeting unfamiliar words in a text (Bogaards, 1998; Hulstijn, 1993). One of the reasons often reported by students is the time involved in flicking

through the dictionary pages and the subsequent disruption of the flow of reading. An electronic dictionary may provide a good solution to this problem." *(Laufer and Hill 2000)*

What Laufer and Hill may have missed is the point that not only do learners find using paper-based dictionaries irksome and tedious, and using PEDs attractive and enjoyable, they may be so motivated to use their PEDs that their use becomes counterproductive and begins to degrade learning. Laufer and Hill are more upbeat in their predictions however, saying:

"The ease and speed of using [PEDs] may encourage the learner to look up unfamiliar words. This in turn, will not only contribute to more fluent reading, but will also increase the chance of acquiring the looked up words"

They go on to make a significant point out about PEDs possibly increasing student motivation:

"If a pedagogical tool is popular with the students, the chances are it will also be beneficial for learning"

however, they go on to say:

"A counter argument could be levelled at electronic dictionaries claiming that the ease of use will result in shallow processing of the looked up word and will therefore be detrimental to retention. Our results do not

support this position. Any attempt to explain why this is so would be only speculative".

Interestingly, Laufer and Hill find variation in performance between their two parallel study populations, in Israel and Hong Kong, which hint at a correlation between differing levels of enthusiasm for using technology-based dictionaries and students' linguistic, cultural and/or national origins. They also describe as 'evident' their finding that Chinese learners prefer a monolingual dictionary approach contrasting with the bilingualist path favoured by Israeli students. They further suggest that Chinese students are more likely than Israeli students to seek pronunciation information on unknown words from dictionaries. They suggest this is because Israeli students share an L1 which has an alphabetic orthography, and so are used to "sounding out" words; with Chinese orthography there is little to connect symbol and sound, and in fact a single Chinese character is often connected with a variety of phonological words depending on which Chinese language or dialect is being spoken (Swan and Smith 1997). Part of the appeal of PEDs may be that many feature an audible pronunciation option, allowing students to hear how the unknown word should sound, without having to learn sometimes complex and often confusing systems of phonetic transcription. This is an advantage of electronic-based dictionaries which paper-based dictionaries can never hope to compete with. However, Stirling (2003) found the pronunciation options on the PEDs she examined to be of poor quality and inaccurate, while Tang described the

sound on the devices she saw in 1996 as "synthetic … not always clear,

and the pronunciation is artificial".

3.2.3. Look ups in PEDs and Paper Dictionaries

Laufer and Hill cite research by Aust, Kelley, & Roby (1993) which also

indicates that using electronic dictionaries is more popular than using

paper-based ones, but which goes on to demonstrate that there is no

significant difference in student comprehension between the two media.

Research on comprehension and retention by students using PEDs in

class, contrasted with groups carrying out similar tasks using paper

dictionaries might be enlightening.

Research by Weschler and Pitts (2000) suggested that looking up an

entry in a PED is around 23% faster than looking at the equivalent entry

in a paper-based dictionary. This actually seems surprisingly slow, and

may reflect the move in technology of the last five years since they wrote

their study, or indicate that the small size of PEDs may make their

interfaces hard to work with. The authors also make several references

to the high cost of PEDs when compared with conventional dictionaries,

which is no longer a major issue. Weschler and Pitts' study is also of

interest because their research population consisted exclusively of

female students studying English in Japan, their L1 environment. Their

student questionnaire found that students were not especially enthusiastic

about using the audible pronunciation functions on their PEDs,

"suggesting that few students have any intention of actually trying to say

their newly acquired words". It seems likely that students using their PEDs in a target language environment, where correct pronunciation is essential for communication on the day to day basis, might respond differently. Nesi (2003), researching with students in the UK, found that they preferred using PEDs over other forms of Electronic Dictionary while reading printed texts and writing by hand, and to a lesser extent while speaking and listening. Where students' work led them to be at a computer, they preferred to use computer-based dictionaries. The implication of this is that students are unlikely to take the task of looking up a word to the computer, where no other reason to use it exists and/or an alternative such as a PED is available. Nesi further suggests that this usage marks a move away from patterns of consultation revealed by previous research concentrating on paper dictionaries, where usage was predominantly for reading rather than writing, and hardly ever for listening and speaking. Further research which looked at students' use of Electronic Dictionaries during the two separate skills of listening and speaking would be valuable. On the distinction between PED and PC based dictionary use, Stirling (2003) suggests that screen size, and the consequent limit on the amount of information that can be displayed, will always put PEDs at a disadvantage.

Weschler and Pitts also comment on the tendency of students to look up more words than they need to understand a given text. They describe this tendency as "the absorbing sponge syndrome" and comment "it seems that the sponge is rarely squeezed".

Stirling (2003) states that although some PEDs feature item definitions written in English, of the students she interviewed "all said they consulted the L1 translation first when decoding".

Much discussion in the authors quoted focuses on the differences between learners' use of bilingual and monolingual dictionaries. Monolingual dictionaries are seen as indications of the strategies which characterise Naiman's et al's 'Good Language Learner' (Naiman et al, 1978); valid meaning may be more or less difficult to extract from them according to the lexicographer's design, but it will be there. Bilingual dictionaries are seen as potentially misleading; there use implies unmotivated students who overrely on translation.

Batenburg (1991), discussing printed dictionaries, implies that the distinction between bilingual and monolingual dictionaries should be blurred, suggesting 'parallel dictionaries' in which entries in both (or indeed, each) language are given the same depth they would achieve in monolingual dictionaries. Respondents in the questionnaire in the current study discuss 'bilingualised' PEDs which share some of these features. Batenburg also argues for a far greater use of pictures in dictionaries, and this is echoed in Collison (1982) who traces the first use of illustration in printed Foreign Language Dictionaries back to 1936 but finds the lack of exploitation of this powerful tool for communicating meaning to be 'surprising'. The writer has found using image search engines such as a Google Images valuable as a means of quickly accessing defining pictures when concrete nouns connected with

unknown objects have come up in computer lab based classes. Where the entire resource of the Internet is available as a picture dictionary there would need to be compelling reasons for using a dedicated and closed-set PC-based Electronic Picture Dictionary. Pictures are, however, already becoming available on PEDs.

Given the fact that printed dictionaries become physically larger as their contents increase, Batenburg's suggestions can only really be seen as a theoretical desiderata with them; however, with currently available technology including vastly increased storage for minature electronic devices (such as the miniature hard drives installed in the Apple iPod range of MP3 players), better and smaller display screens, and wireless or phone-based connection giving access to the limitless storage potentials of the Internet, a Batenburg dictionary no more obtrusive than a 2005 PED becomes a real, and in fact likely, possibility. Future teachers would need to give serious consideration to the potential for such dictionary power in the hands of students, more especially if the current unequal distribution of PEDs between differing language groups remains an issue.

3.2.4. PEDs and learner strategies

The much discussed 'Good Language Learner' was first identified in a 1978 study by Naiman et al. While there have been criticisms of the study – Naiman's group did not seem to do much research on whether the strategies they found used by Good Language Learners were also

employed by 'Bad Language Learners' or spend time identifying and

interviewing weaker learners (Skehan 1989), and their sample was

culturally limited (Nation, P 1989) – their study remains influential.

In Naiman's hypothesis Good Language Learners are mainly good at

learning languages because they are ingenious in the development of

learning strategies. His group identified five metastrategies employed by

the Good Language Learner. It is worth looking at each strategy and

considering how classroom use of a PED matches it:

Strategy 1: Active task approach: good language learners actively

involve themselves in the language learning task.

Bringing a PED to class would appear to signal active involvement in

learning.

Strategy 2: Realization of Language as a System.

The awareness of the importance of vocabulary learning, and use of any

dictionary, would appear to indicate a system-based approach to

language.

Strategy 3: Realization of Language as a means of Communication and

Interaction.

Here how a PED is used provides the context. A poor learner may place

his PED in the path of communication, using it for example as a barrier to

avoid becoming involved in classroom tasks. The Good Language

Learner may carry his or her PED around during their daily activities,

using it to check and learn new language items encountered.

Strategy 4: Management of Affective Demands.

This strategy involves learners in an awareness of the difficulty and

complexity of the language learning process and involves them in

monitoring their own learning capacity. The Good Language Learner

might wish to restrict the time to he or she spent looking up vocabulary if

aware that it was unlikely to be retained.

Strategy 5: Monitoring of L2 performance.

Naiman et al tell us that Good Language Learners constantly revise their

L2 systems. Poor learners may feel that regular consultations of their

PEDs are all that they need to master the target-language.

From the above it would appear that it is hard to state categorically

whether bringing a PED to class marks a student out as a Good

Language Learner or is a mark of a demotivated student. Like any tool

the context in which a PED is used tests its validity, not the tool itself

(Schmitt in Schmitt and McCarthy 1997).

Dörnyei and Thurrell, in a paper *Strategic Competence and How to

Teach it* (1991) identify 'strategic competence' as an essential element of

the communicative approach. Strategic competence encompasses those

skills which enable a speaker to get meaning across to their listener.

Dörnyei and Thurrell suggest that such a skill set is discreet from those skills traditionally seen as attributes of linguistic competence in a good language learner, such as good knowledge of grammar and a wide lexical base. As such, "strategic competence exists fairly independently of the other components of communicative competence". A level of strategic competence is necessary in any circumstances where the speaker needs to communicate messages which their linguistic resources prevent them from communicating successfully.

Dörnyei and Thurrell go on to subdivide strategic competence ploys as falling into two sets of strategies; message adjustment strategies, and resource expansion strategies. In the former the speaker may accept that it is not possible to fully get their message across. With resource expansion strategies the speaker risks failure but attempts to remain in the conversation. These strategies may include:

- paraphrase or circumlocution;

- approximation in lexical choice;

- non linguistic ploys such as mime, gesture, imitation or drawing;

- borrowed or invented words. (Dörnyei and Thurrell do not point out that such words may actually be features of the speaker's intralanguage which he/she is not aware of having 'borrowed or invented').

One common feature of the use of Portable Electronic Dictionaries is the readiness with which some users resort to them during conversation, compared with similar use of a paper dictionary (the writer has on several occasions been approached by students wishing to discuss aspects of their course and looking up difficult concepts 'on the fly' as they speak to him). Although Weschler and Pitts (2000) found that the students in their sample did not use PEDs in this way, or use them while travelling, their research was carried out in the L1 environment of Japan, rather than an L2 location where target language use may be necessary for day-to-day survival. Such use may be seen as a resource expansion strategy; however it can get in the way of the flow of communication and as such could be seen as a communication *avoidance* strategy. Furthermore, use of PEDs may seem to encourage an attitude among students that it is more important to break off interaction while the exact and specific lexical unit is retrieved via the dictionary, than it is to take one's part in a natural and ongoing human exchange. (Stirling 2003)

Dörnyei and Thurrell go on to suggest a number of activities designed to encourage users to be aware of and use "thinking time" discourse markers or 'fillers' ('umm', 'let me see…' 'well'). Several of these activities involve constructing nonsense utterances which may be beyond the level of all but the most advanced classes, and which many groups would find culturally challenging. It could be suggested within discourse that use of a PED is a strategy to gain thinking time but given the complexity involved in the task of retrieving words, this might be contentious.

3.2.5. What features should be included in a PED designed to be an efficient learning tool?

3.2.5.1. What features should be included in a PED? - **Collocations**

A feature for that one would hope to find in [both monolingual and multilingual] Electronic Dictionaries would be some guidance on the use of collocations and compounds. McAlpine and Myles (2003) go so far as to say "we believe it should be the aim of the ESL lexicographer to include all the more or less fixed expressions cohering around a node word".

Bahn (1996) analyzed a number of printed dictionaries, and graded them according to whether or not they dealt with collocations listed on a 1000 item corpus. Bahn went on to suggest ways in which qualitative treatment of collocations could improve access for learners:

- Collocations should be listed under entries for all component words;
- Collocations should be highlighted or should be allocated a separate place in the structure of the entry.

Nation (2001) and points out that although collocations are frequently mentioned, 'knowing' a word involves far more than simply being

aware of which other words are commonly used with it. Such items of knowledge include whether a word only ever usually appears in writing, or whether it is part of the spoken language; the context in which it can be used, and if there are constraints on its use.

3.2.5.2. What features should be included in a PED ? – Examples of Usage

While many learner dictionaries such as COBUILD use corpus-based authentic examples; Amritavalli suggests with some circularity that "corpus-based 'genuine' examples are argued to be incomprehensible as well as inauthentic for learners".

3.2.5.3. What features should be included in a PED ? – advanced look-up and retrieval.

Dodd (1989), possibly envisaging a future of mainframe-based electronic dictionaries, predicted fourteen possible criteria for fuzzy searching, including search routes such as:

- "sounds like A;

- rhymes with B …

- includes the word L. in its definition".

Fifteen years after Dodd's paper was published, pocket PEDs provide none of these facilities, although they may well feature calculators, memo facilities and games. It seems little attempt is made in the

design of PEDs to exploit the sort of advanced look-up facilities which can only be available via a computerized dictionary.

Lexicographical information is rarely given in the advertising or specifications for specific PEDs (Nesi 2003), though when it is they are generally stated to be based on a particular printed dictionary. Sometimes advertising stresses the source of lexicographic content within a respected printed authority. (Aiko Trading Company advertisement 2005).

Dictionaries ordered according to a conventional alphabetic structure may present problems to learners. Attempts have been made to produce printed learner lexicons where vocabulary is accessed by topic or notional field, such as the *Longman Language Activator* and the *Oxford Learner's Wordfinder Dictionary*, but these may involve complex look-up procedures and are often not popular with teachers or learners. Hugh Trappes-Lomax (1997) claims in his preface that the *Oxford Learner's Wordfinder Dictionary (OLWD)*, "instead of giving you the word first and then its meaning, … gives you the meaning first and them the word (or words) you are looking for." Schneider (1998) suggests that this is an aspiration which Trappes-Lomax's OLWD does not wholly achieve, pointing out that it retains an alphabetic structure.

It is in the nature of electronic dictionaries that they are non-linear; they have no front or back covers, and the user does not have to leaf

through them to find the relevant entry. As such they would seem the ideal platform for a look up system based on Trappes-Lomax' or Dodd's ideas. McAlpine and Myles (2003) quote Bolinger (1990), in saying *"… hard-cover … [ESL] dictionaries … have about reached their capacity. Any really dramatic advance would burst the covers"* and then go on to outline how physical space is not a limitation in an electronic format, and, in the case of the online platform they are describing, a dictionary can be endlessly extended and continuously updated, adding up to a model of continuous rolling publication. They further describe how an experimental cognitive look-up system might work in such a dictionary. McAlpine and Myles' model is based on theory; Mackintosh (1998) describes a study which aims at examining how learners use dictionaries, with a view to the results informing the design of a new electronic dictionary.

However, while this level of flexibility and experimentation may be possible with electronic dictionaries based on open platforms which allow researchers to experiment, it seems that in the case of most PEDs design is not informed by lexicographic innovation or pedagogical theory. There is no reason to suppose that this lack of innovation is due to technological limitations, but rather a lack of imagination or, indeed, the possibly paradoxical idea that innovation on a metacognitive level does not sell technology-based products.

3.2.5.4. What features should be included in a PED ? – Phonetic access

Sobkowiak (1994) makes an important point in connection with learners' use of all dictionaries. Looking up a word in a dictionary involves being able to spell it, but many learners first encounter words in spoken form and are unaware of what the correct spelling is. In the case of PEDs this involves entering the individual letters of a heard lexical item on the keyboard, or running through a list of items whose spelling approximates the heard item. How often this process takes place would be a fruitful target for further research; Weschler and Pitts (2000) found that "students do not trust their ability to catch correctly the words that they do hear" adding "perhaps rightly so". The 'wildcard' facility Stirling (2003) found on several of the PEDs she examined, which allows users to enter a question mark or other character for unknown letters, would be of some help in this process.

Sobkowiak describes the process whereby heard language is converted to text and then searched for in a dictionary to extract meaning as 'graphemic mediation'. He points out that a non-native listener is faced with many problems in extracting discreet words or units of meaning from the flow of suprasegmental speech. These problems might include transmission noise, phonetic reduction, or idiosyncrasies specific to the speaker.

Sobkowiak discusses the concept of the PAD – the Phonetically-Accessed Dictionary. He is concerned with segmental models of

pronunciation, and is concerned both with both how such a dictionary would access and create words by combining phonemes, and how it would be sequenced. As discussed above, sequencing is not an issue in an electronic format which provides random and non-sequential access.

Although Sobkowiak discusses technology-based PADs, what he appears to be proposing is a device in which the student would enter pronunciation using IPA or some other graphic transcription system, imposing yet another obstacle between hearing and understanding. Current technology offers the option to design PEDs whereby the user could *speak* the heard word into the device and extract a definition.

However, to create a PAD based on recognition of a word spoken into its microphone, current technology would probably approximate the architecture of the speech-recognition engines built into some modern Word Processor systems and into Operating Systems such as Microsoft XP. It seems extremely likely that such speech recognition software is based on a database of sound samples of recognized whole words. Creating words 'on the fly' by aggregating phonemes and then attempting to reproduce them as readable text is likely to generate orthographic problems with voice-to-text systems, though this seems to be the architecture of the voice production systems on some PEDs, which produce sounds for words which are already in the database, but do not have to guess at an unknown heard word.

(A field interview with a Taiwanese student at Salford University suggests, that this process of phonetic aggregation is precisely how the voice production technology in most PEDs works. The student demonstrated a recently purchased high specification PED, which featured graphics and many of the other features teacher respondents to the questionnaire felt might be useful. He explained that his PED features two voice options; 'real voice' and 'machine voice'. 'Real voice' is not available for each word, but the student was able to demonstrate an example using the word 'apple'. This word had clearly been sampled in its entirety, and was definitely superior in sound to 'machine voice' examples. The student also demonstrated that the machine is able to pronounce nonsense words; it did this with the invented word 'scrogit'. Clearly then the 'machine voice' is constructing suprasegmental pronunciations from aggregations of individual phonemes. The student pointed out that the offering of 'real voice' and 'machine voice' options was not an especially new feature of PEDs, although PED-using students in a later group had never heard of this distinction.)

As mentioned above, that this technology is available is apparent to modern users of Word Processing software. This dissertation is partly being written using the Speech Recognition option built into Microsoft Word 2003. As the writer speaks into a microphone the program recognizes the words used and displays them in the document. Although errors are not infrequent, using speech

recognition software with a headset microphone leaves the hands free

to make ongoing corrections on the keyboard in the conventional

way. This radically reduces the number of keystrokes needed and,

significantly, bypasses many spelling issues. If voice recognition can

be used with a word processing package, which must imply a very

large database of possible words which can be recognized, it can

certainly, with current technology, be attached to a dictionary

database. Unfortunately, it is likely that a margin of error will always

be inherent in speech recognition technology. While it seems evident

that modern implementations of speech recognition have some

grammar and word-frequency knowledge built in and do not simply

work on a word recognition level, it would seem to be inherently

beyond current technological paradigms to build in the kind of

cultural and contextual knowledge which allows human speakers and

listeners to differentiate between most homonyms.

Sobkowiak suggests that where a PAD encounters close homonyms,

the definition presented to the dictionary user should be based on

word frequency, essentially a system which presents the user with

definitions ranking entries by textual probability (and such prediction

may be a feature of today's Word Processor Voice Recognition

systems). He goes on to argue for the inclusion of frequency

information in all learner dictionaries and also sees far reaching

implications for curriculum design through widespread use of PADs.

3.2.6. Can training improve learners' use of PEDs?

"All studies reveal, that foreign language learners, as a default, resort to a bilingual dictionary, unless they are forbidden to do so."   (Zöfgen 1994)

It seems clear that effective training in dictionary use benefits learners and improves their performance in tasks where dictionaries can be helpfully used. In a study called *"Dictionaries can help writing – if students know how to use them"* Jacobs (1989) gave three classes a passage correction test. Only one of the classes was instructed in dictionary use; here the use of a paper monolingual learners' dictionary. Results showed improved performance in the final examinations amongst the class that received instructions, and a far greater willingness to use dictionaries in classwork.

Despite these studies, dictionary training does not appear common in the ESOL classroom, possibly for logistical reasons. Schneider (1998) claims "that the vast majority of language learners do not know how to use dictionaries is hardly their fault. Dictionary techniques and effective user strategies are rarely mentioned in language curricula and rarely taught in foreign language classrooms." This may be unfair, and Schneider gives little evidence to back it up. Curriculum designers come up against the problem that students will not usually carry one single prescribed dictionary.   In recent years some Course Book publishers (and in many EFL contexts the course book *is* the curriculum) have

attempted to get round this issue by including 'dictionaries' in the

student package. An example is provided by the 'Cutting Edge' series.

However, these are not dictionaries in the true sense, but rather

glossaries of the new language presented in the book.

While Jacobs' work was based around a single, specific, printed

dictionary, the EFL classroom teacher who wishes to exploit Portable

Electronic Dictionaries brought to class by students faces similar

problems of diverse dictionary choice amongst students to those faced by

curriculum designers. The dictionaries are likely to be extremely

heterogeneous; they will have been produced in different countries for

the use of different language groups. Many manufacturers produce PED

models at different levels of cost, with more expensive models featuring

a larger word list and more facilities. All the electronic dictionaries the

writer has encountered have been primarily bilingual, with the user

interface based around the students own language. (Higher specification

models may offer a monolingual option). In a class a teacher may

encounter a situation where a percentage of students, but not all, have

PEDs, and where those students that do have them have dictionaries

based on a variety of L1s and of widely varying quality. A teacher

wishing to provide a class of PED users with instruction in their most

effective use does not have a standard and specific dictionary which each

learner in class can use, and cannot hope to be familiar with each model

of PED being used. In this situation the teacher would either have to

provide instruction based on a generic model of dictionary use, or

possibly teach a class based round printed dictionaries and then discuss

with learners how their new skills could be applied to electronic

dictionary use.

3.2.7. Who uses PEDs?

Nation (2001) discusses the concept of the "learning burden" of lexical

items, stating "different words have different learning burdens for

learners with different language backgrounds and each of the aspects of

what it means to know a word can contribute to its learning burden".

Thus if the target word has a cognate in the learner's L1, or is a loan

word, or if the students first language shares grammatical and

phonological features with the target language, the word will be easier to

learn. What follows logically from Nation's argument, and seems almost

a truism, is that any given first language learner group will have a greater

or lesser learning burden with any given target language. Spanish

speakers are likely to find it far easier to learn Italian them to learn

Polish. The greater the language distance, or difference in terms of

linguistic morphology, between the learner's first language and the target

language, the harder they will find it to learn words. By coincidence it

seems the students who may be amongst those with the greatest learning

burden for English learning – speakers of East Asian languages and

Arabic - are the most likely to bring PEDs to class.

It has been suggested that use of PEDs by East Asian students is

symptomatic of a general passivity and unwillingness to be involved in

classroom activities that has its roots in the educational cultures of the

countries in which these students grow up (Flowerdew and Miller, 1995

and others quoted in Cheng 2000). This seems a sweeping

overgeneralsation, which in a paper *Asian students' reticence revisited*

Xiaotang Cheng (2000) describes as 'a groundless myth'. What does

seem reasonable to suggest is that the students come from countries

where PEDs are more cheaply and easily available than other students'

home countries, and cultures in which microelectronic devices are

extremely popular and fashionable.

Chapter 4 - Methodology

4. Methodology –

4.1. Introduction

As stated in the main introduction, the research questions which this study

aims to examine are:-

- Do EFL/ESL teachers have predominantly negative views on PED use in

  their classrooms, what are the reasons for this, and can they be justified?

- Are there significant differences between what PEDs and paper-

  dictionary usage brings to the classroom experience?

- Do PED have any effects, either beneficial or detrimental, on language

  acquisition and learning?

Clearly amongst the best ways of finding out about the attitudes of EFL/ESL

teachers is to ask them, and for this reason a questionnaire format was chosen

as the main research tool. Of the three main research questions, further work

remains to be done on the second and third, and recommendations for this are

made in Chapter 7. For the purposes of this study, the main interest lies in

finding out how teachers might answer these two questions. It may be that

future classroom experimentation reveals that teachers may have to challenge

these opinions.

4.2. Survey Design and Implementation

The main tool used for assessing Teachers' Attitudes to PED use in this study has been an online survey. The survey consisted of 32 questions, was developed using ASP Select Survey Version 8 and hosted by the University of Manchester. The survey was open to respondents with internet access and the URL address of the survey world-wide. Measures were taken to ensure that the URL was publicised to EFL/ESL practitioners only and although the survey was indexed by Google (this could have been avoided using a 'NOINDEX' HTML meta-tag), it is not currently listed by the Yahoo, Lycos or AltaVista search engines. As such it appears to have had few malicious or invalid responses. The survey was open for 28 days between 9 March and 7 April 2005 and attracted 210 responses.

Following Bell (1993), the questionnaire was designed to attract a range of responses and data types. As such it included open questions, list, category, ranking and quantity questions. In several of the multiple choice questions respondents were invited to add further comments. In these and other open questions, coding has been used in the data analysis section to identify trends in answers with frequency indicated where comments have revealed recurring themes. During the design of the questionnaire a series of informal interviews were conducted with EFL/ESL practitioners which informed the content of some questions.

Care was taken to avoid ambiguity in phrasing of questions, although a problem did arise with question 13, 'what is the first language/nationality make up of your classes'? Nationality and first language are two separate pieces of information; while it might have been better to split this into two questions, this might have overloaded the respondents slightly, resulting in one question asking about the respondent's own background and two separate questions about the students' backgrounds.

One theme that came out of the questionnaire was that teachers' attitudes to PED usage are changing. In retrospect, and given that 58% of respondents had been teaching for more than ten years, one very useful additional question might have been "have your attitudes to PED use in the classroom changed over the last (five) years".

Rather inevitably, this sort of survey is biased in drawing a sample of respondents who have been in the profession for a significant period and/or who take sufficient interest in the field and their personal development to read forums dedicated to the subject. This is borne out by Question 5, which showed that 58% of respondents had worked as an EFL/ESL teacher for longer that 10 years, and 71% for more that 5 years, while in the compulsory Question 3, 120 of the 210 total respondents (57%) stated that they had professional TESOL qualifications at Masters level or above. While this bias may have ensured informed contributions, the study would have gained validity from the contribution of recently trained teachers, whose lack of experience - and whose common acquisition of a skills base which seeks to

overcome shortcomings of pedagogical or linguistic knowledge – might have brought a different perspective to the study.

Question 3 asking for the respondent's highest level of TESOL qualification was partly included as a filter, on the principal that any malicious respondent would be unaware of the qualifications available to EFL/ESL teachers, and easy to identify from their response to this question. Only three respondents seemed doubtful, and of these none fully completed the questionnaire.

4.2.1. Deployment

The following methods were used to publicise and deploy the survey:-

- Mailing to previous contacts

  An email circulated to some 80 of the writer's past and previous colleagues, fellow-students, trainers and friends in the profession. Several of these people responded to say that they had forwarded information about the survey to other practitioners.

- Mailing Past and previous MEd students

  An email circulated to students on the MEd ELT/ELT and Educational Technology courses at the University of Manchester.

- Personal contacts

  Chiefly colleagues in the Department of Modern languages at the

  University of Salford, students on the MA TESOL course at Salford

  and members of the Department of Education at Sheffield Hallam

  University.

- TESL-L

  An email mailing list for EFL/ESL professionals. While the list's

  membership is open worldwide, the readership tends to be amongst

  teachers in the USA, and American teachers working overseas.

  Publicising the questionnaire on TESL-L is almost certainly

  responsible for the high number of responses from US Nationals.

- Forums for EFL/ESL teachers on the Internet

  These included Dave's ESL Café, the IATEFL Forum, and the

  About.com forum. Although posting to USENET groups such as

  alt.usage.english and misc.education.language.english was

  considered, it was felt that these would be likely to generate a

  significant amount of invalid responses.

No attempt has been made to gather data on how many of those people

invited to respond actually did so, or where those people who did respond

heard about the survey. Of 104 respondents who gave their names on the

survey (this was an optional question), only 28 were personally known to the writer, suggesting that the forum and email list posting brought a significant number of responses.

4.3. Other primary research methods

Although the questionnaire formed the main focus on which this study has been based, other input has informed it:-

- informal interviews with friends, colleagues and fellow students in the profession.

- emails and other communication engendered by the online requests and from respondents to the questionnaire.

- field notes made by the writer on students' use of PEDs in his classes for the Diploma in Management and English at the University of Salford. Where individual students are discussed, names have been changed.

4.4. Language constraints

As a researcher looking at how Chinese ESL students use PEDs, Gloria Tang (see Chapter 3) has a major advantage in being a Chinese speaker. Those PEDs which the writer has examined have interfaces written in Chinese characters, although some keyboard labels may also be in English. This means that in order for a researcher who does not share students' L1 to get 'under the hood' of a PED, it is necessary to ask a student for assistance and a demonstration.

Students' use of Portable Electronic Dictionaries in the EFL/ESL Classroom; a Survey of Teacher Attitudes.

Chapter 5 - Data Analysis and interpretation

5. Data Analysis and interpretation

The survey was open over a 28 day period from 9 March to 7 April 2005 and

consisted of 32 questions, spaced over 8 themed pages. There were 210

responses. The individual questions and their results are discussed below.

5.1. Page 1 Question 1 – Respondent Gender

Two hundred and two respondents answered this question, 133 women (66%)

and 71 men (35%). Although it has not been possible to access figures for

the gender-balance of the TESOL profession worldwide, contact with the

British Council and with Dr Jane Sunderland at Lancaster University (who

writes on TESOL and gender) suggests that this ratio is representative, while

the 'Consultants-e' web site quotes an estimated 60% women to 40% men

ratio.
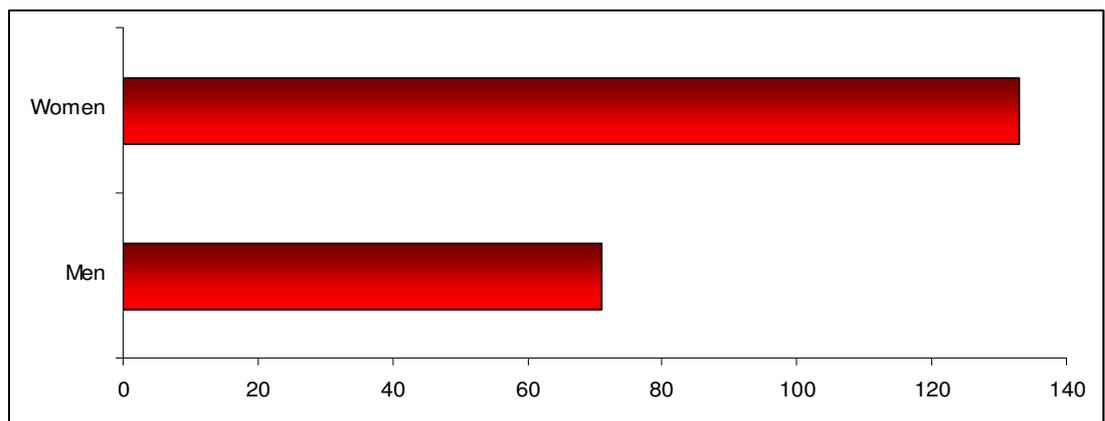
Chart 1 – Respondents' gender (based on 202 responses)

5.2.   Page 1 Question 2 – Respondent Country of Origin

This question was compulsory, and answered by all 210 respondents. Respondents came from 38 countries, with the predominant number coming (maybe unsurprisingly for EFL/ESL Teachers) from English L1 countries such as the UK, the USA, New Zealand, Canada and New Zealand. Other significant groups came from Taiwan, Switzerland, China and Korea.   The inclusion of Switzerland in this group may suggest that a cluster of Swiss teachers decided to take part in the survey, and is unlikely to have scalable statistical significance.
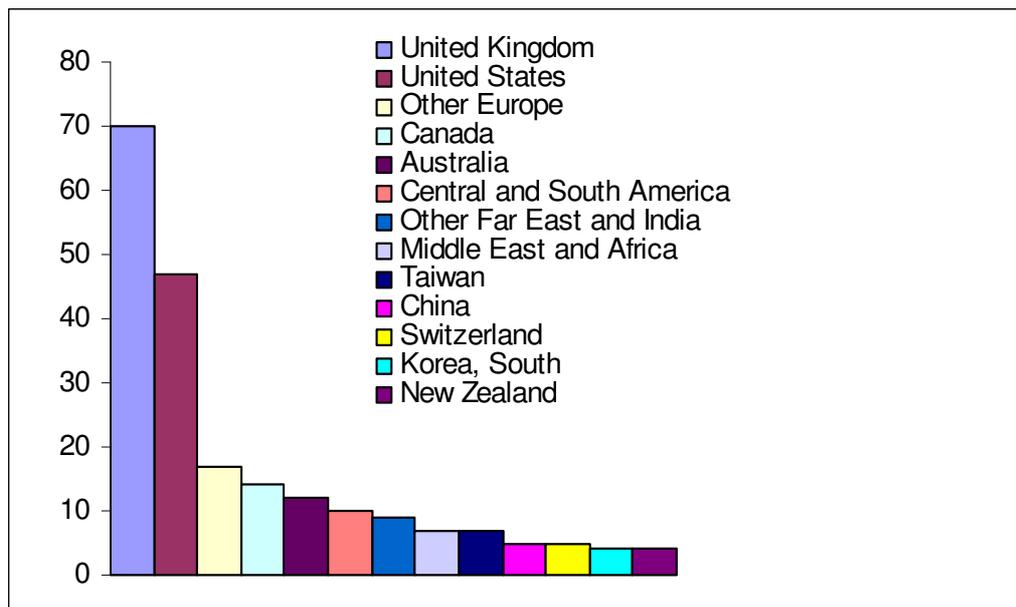
Chart 2 – Respondents' Country of origin. Single countries with three or fewer respondents have been grouped.

Comparison with question 8 reveals that significant numbers of respondents are teaching outside their country of origin. American respondents, however, are more likely to be teaching in the public sector and based in the USA.

5.3. Question 3 - What is your highest level of ELT qualification?

This question was partly included to assess that respondents to the

questionnaire were bone fide EFL/ESL practitioners. However, the response

actually suggested that many respondents were among the more highly

qualified members of the profession. The question was mandatory and so

attracted responses from all 210 respondents.   Responses have been

categorised into nine groups:-

- ■ Short course
- ■ CELTA or equivalent certificate level qualification
- □ DELTA or equivalent Diploma level qualification
- □ Professional qualification - graduate
- ■ Professional qualification - post-graduate

- ■ Post-masters qualification

- ■ Non-professional qualification recorded - graduate
- ■ Post-graduate qualification recorded - not specified if profesional

- ■ Other qualification or unknown response

Chart 3 – Respondents' highest level of TESOL Qualification.

Relevant TESOL qualifications were recorded by the 139 respondents in the first five categories. This shows a heavy preponderance of respondents with post-graduate teaching qualifications – more than 30% more respondents were qualified at Masters levels than the number of Short-Course, CELTA and DELTA respondents combined. This number could have been even higher as many of the respondents in the non-specific post-graduate qualification group recorded responses such as 'Masters' or 'MA' which could in fact refer to professional qualifications. Thirteen respondents were qualified at PhD level, of whom three specified TESOL specialisms.

Although a large group were qualified at CELTA level it seems likely that this sample does not represent the qualification profile of the global population of EFL/ESL Teachers.

5.4. Question 4 - Are you a Native English Speaker yourself?

This question was compulsory. Seventy-one percent of respondents were

native speakers and 29% not. This seems an encouraging result which does

not suggest an overwhelming native-speaker bias.
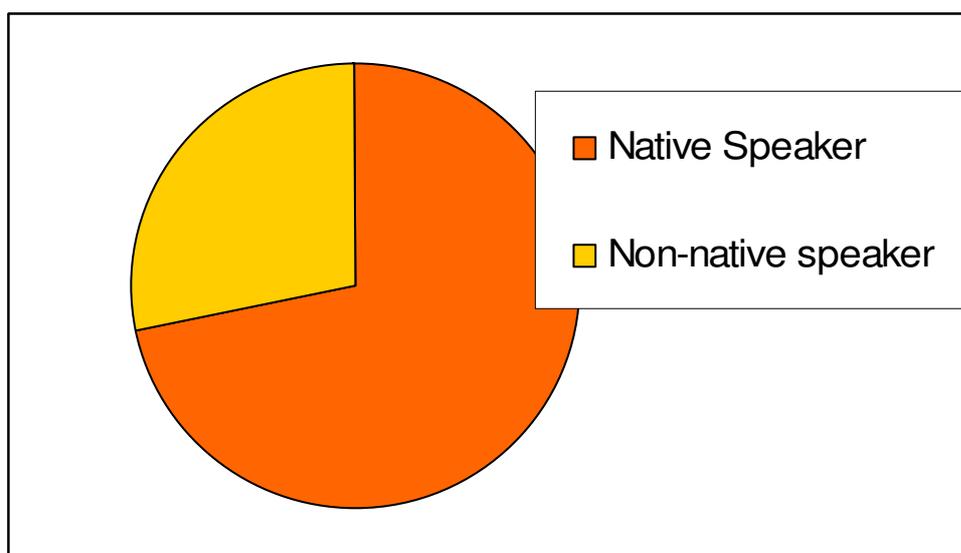
Chart 4 – Proportion of native and non-native speaker respondents.

5.5. Question 5 - How long have you been working as an EFL/ESL Teacher?

This question was compulsory. Respondents were asked to record how many years they had worked as an EFL/ESL Teacher over four bands. Again, the data suggests the great majority of respondents came for the more experienced sector of the EFL/ESL Teaching population.
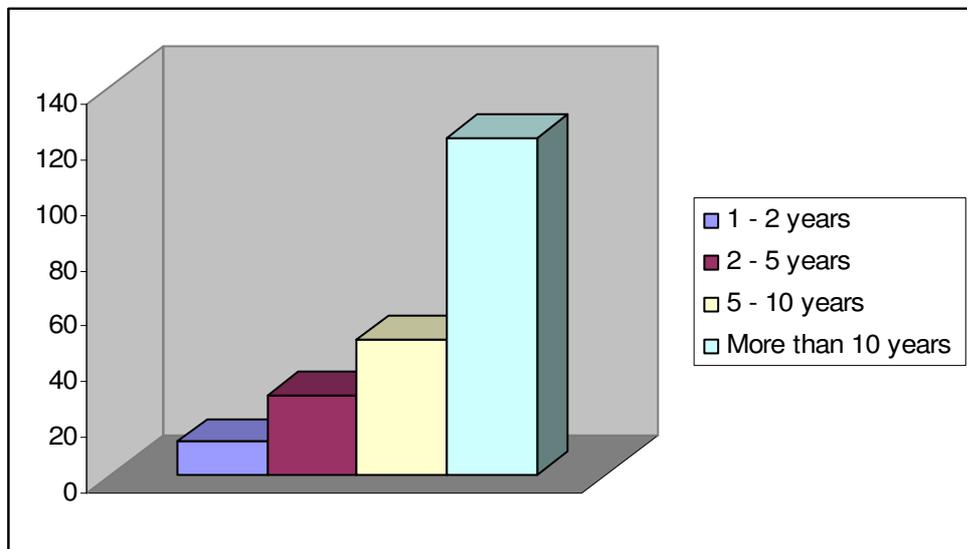
Chart 5 – Respondent teaching experience.

5.6. Question 6, Respondent name and question 7 respondent email address.

One hundred and five respondents chose to give their names and 107 their email address in these optional questions.

5.7. Question 8 – Country the respondent is currently teaching in.

One hundred and ninety-five respondents chose to answer this optional question. The two largest teaching locations are the UK and USA. It seems reasonable to suppose that teachers working in English speaking countries may observe different patterns of PED usage from those working in students' L1 countries.

The size of the third largest group, the United Arab Emirates, reflects the fact that the questionnaire was widely circulated amongst teachers at a university in the UAE with a very large ELT department. Again, Switzerland produced an unexpected number of respondents.
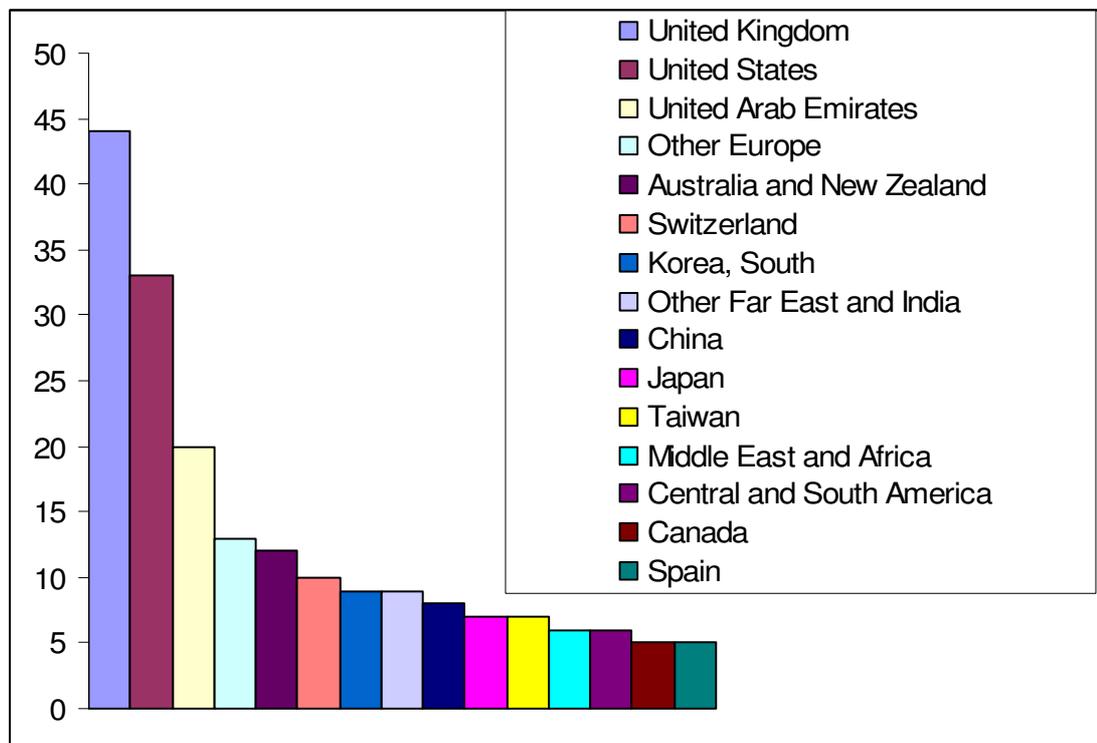
Chart 6. Respondents' teaching location. Single countries with three or fewer respondents have been grouped.

5.8. Question 9 – Which of these age groups do you teach?

One hundred and ninety-five respondents chose to answer this optional question. Descriptive terms were used rather than specific age bands. The question allowed respondents to make multiple selections across five categories; 11 respondents selected three and 11 four categories and 41 two categories, with all other respondents selecting a single category.
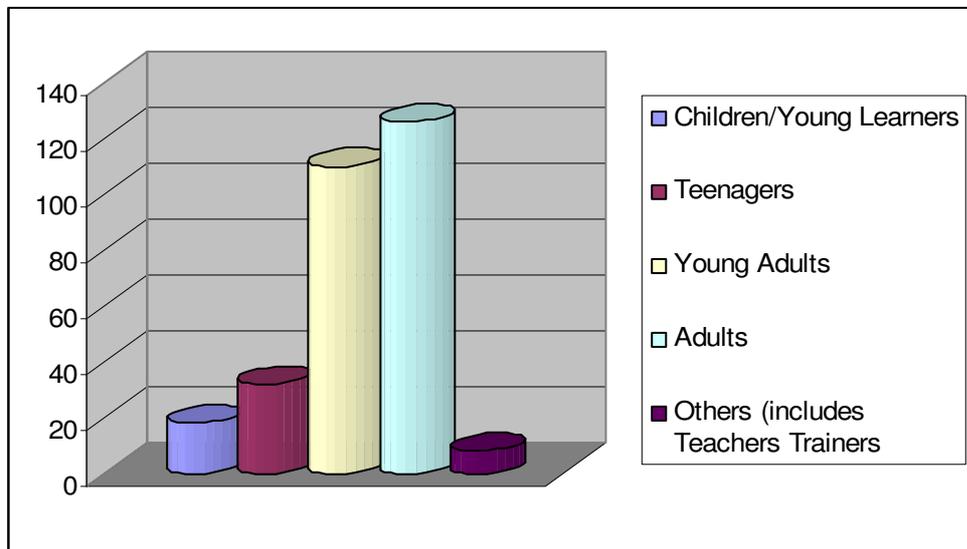
Chart 7 – Age groups taught by respondents. Multiple selections were allowed and these groups should not be read as being mutually exclusive.

5.9. Question 10 – Which of these descriptions best describes the place where you do most of your teaching?

One hundred and eighty-four respondents answered this optional question, for which only one category could be selected. Again, the figures show a heavily dominant group from the Higher Education sector, reinforcing the impression that the questionnaire attracted responses from practitioners who

are among the more highly qualified and experienced sector of the

profession.
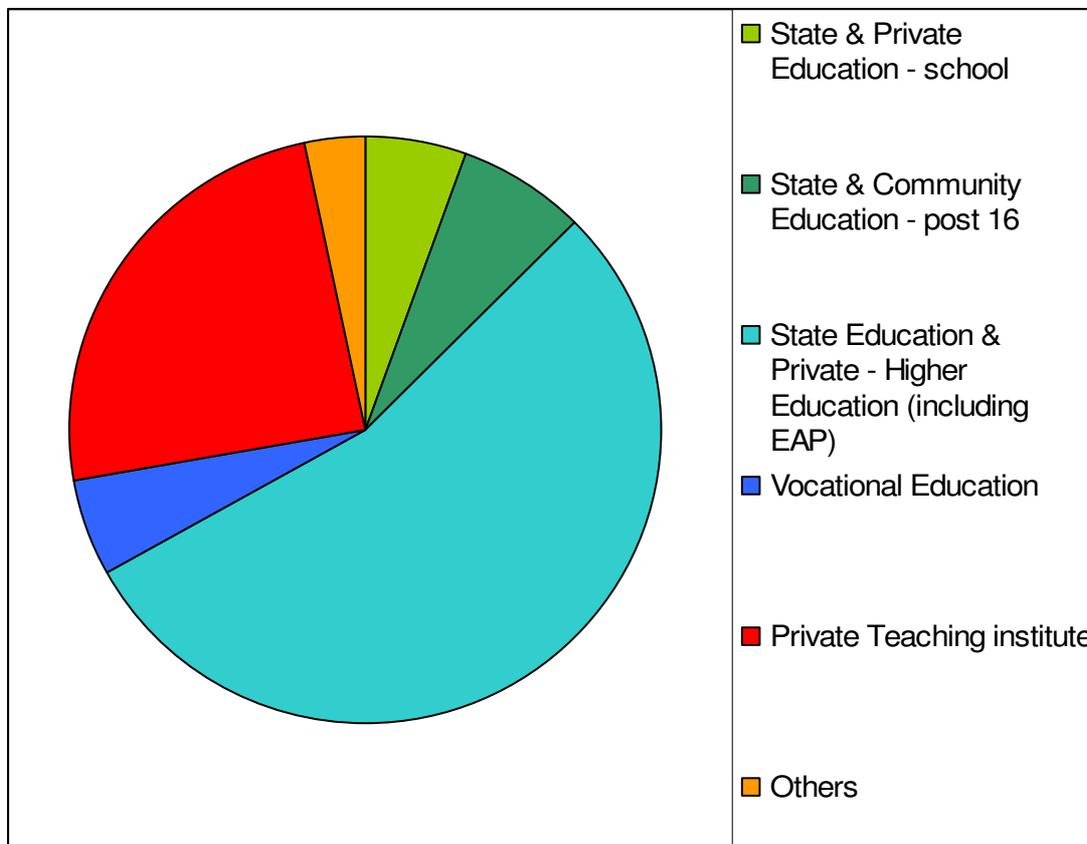
Chart 8 – Respondents teaching sector.

5.10. Question 11: How many different groups do you teach?

One hundred and ninety respondents answered this optional question. The number of groups ranged from 1 – 20 (this was actually the maximum range allowed, and was intended to provide headroom. It seems quite surprising that 10 respondents reported teaching more than 10 groups per week and four recorded teaching 20 groups weekly). The average number of groups taught weekly was 4.5.
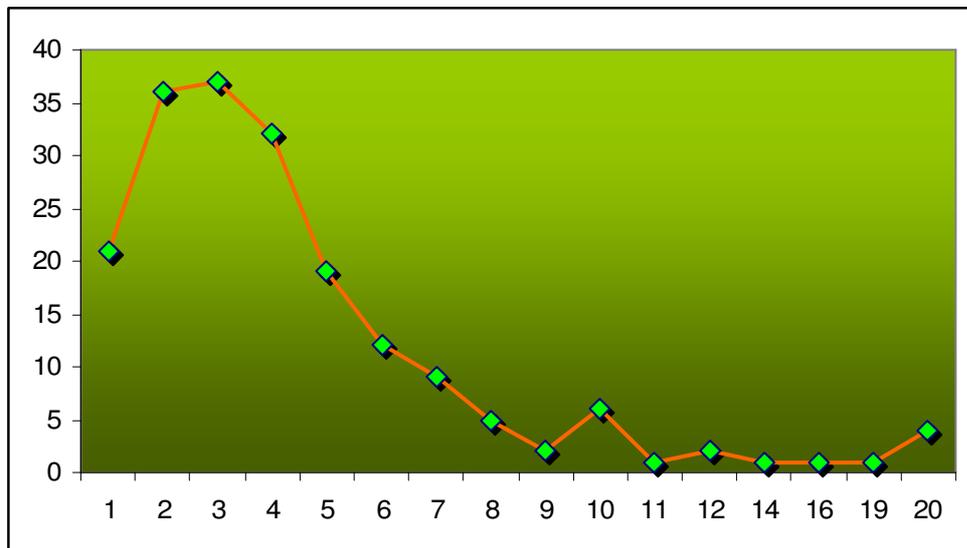
Chart 9. Number of groups taught weekly.

5.11. Question 12: What is the average number of students in each of your groups?

One hundred and eighty-six respondents chose to answer this optional question. Seventeen respondents specified that they taught groups with more than 30 students. One of these specified "in Japanese university, English classes are considered lecture courses, so the numbers run quite high". The

highest average number in a group was 100, recorded by a respondent

teaching at a University in the United Arab Emirates.
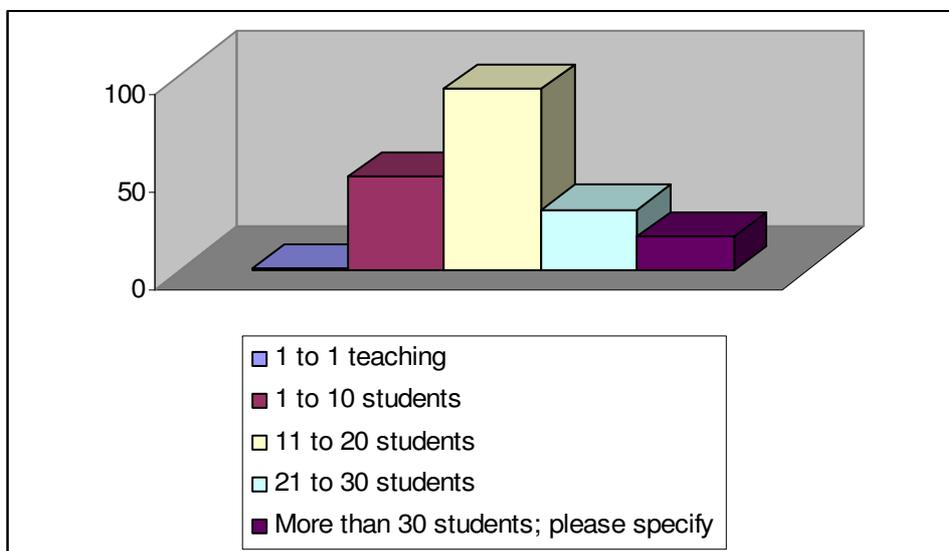
Chart 10 – Average number of students in groups.

5.12.   Question 13: What is the first language/nationality make up of your classes?

One hundred and fifty-six respondents answered this optional question, with

35% of total respondents choosing to skip it. The question generated a rather

confused set of data chiefly because it did not differentiate clearly between

language and nationality groups; some respondents replied with nationalities,

such as 'Sudanese', languages such as 'Tagalog' or combination responses

such as 'Chinese speaking Taiwanese'. The data generated has been

examined in order to produce statistics based on language rather than

nationality. Where obvious language/nationality correlations exist (Omani

students are likely to be Arabic speakers) changes have been made, otherwise

exclusively nationality-based data has been removed.
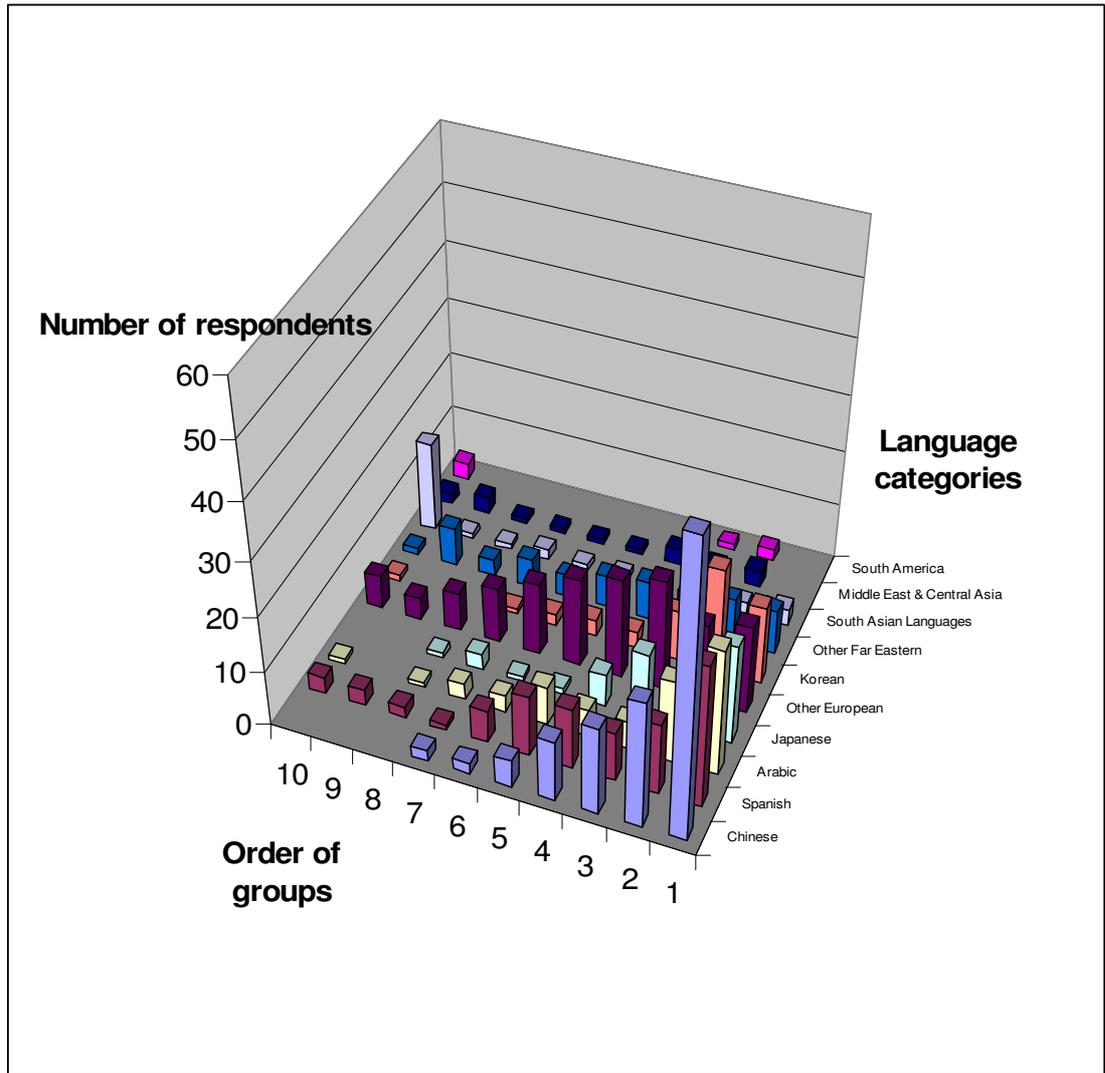
Chart 11 – Main language groups taught in order of number of students.

Fifty-seven individual languages were recorded. These have been grouped

into ten geographical categories. Where more than ten instances of any one

language were recorded it is represented individually; the languages in

question are Chinese (itself a group including entries for Mandarin,

Cantonese and Taiwanese dialects), Spanish (the high number of Spanish

speakers included may reflect the number of respondents who are USA-based

EFL/ESL practitioners), Arabic, Japanese and Korean. The following chart

summarises total entries:-
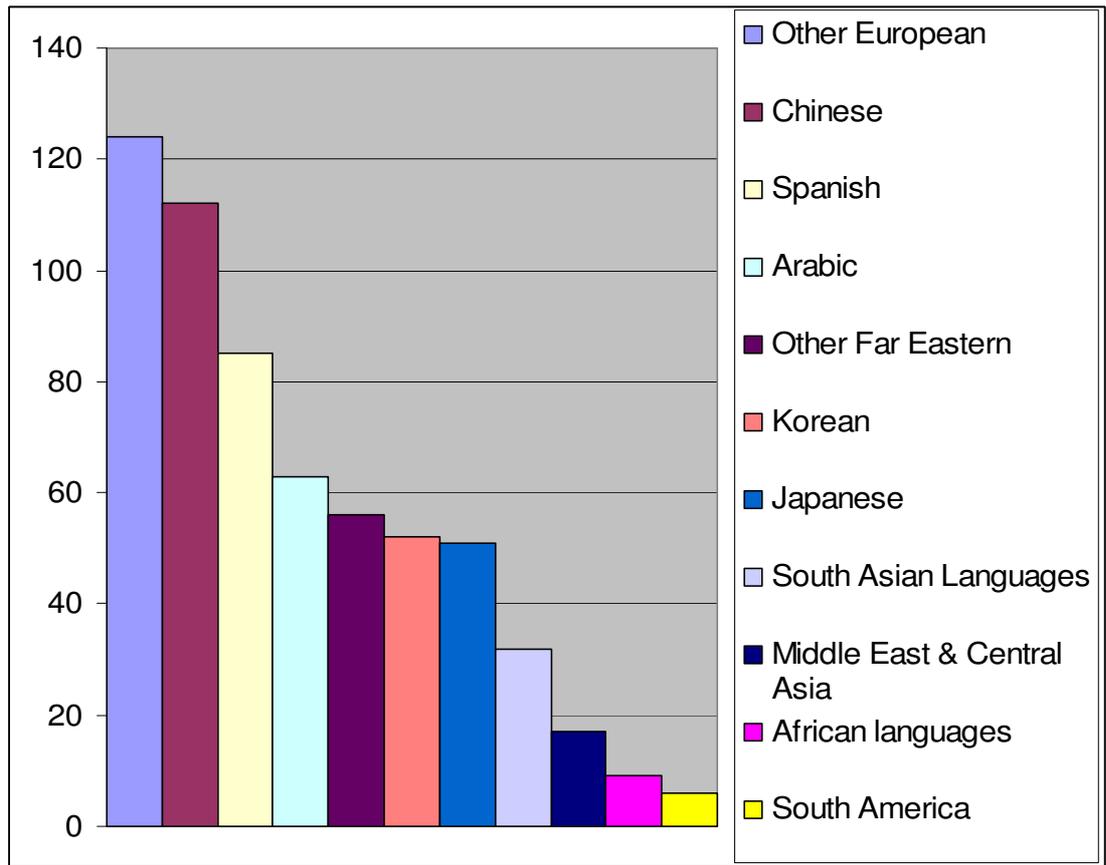
Chart 12 – Main language groups taught – total entries.

The 'Other European' category includes languages such as French, and

Portuguese which are spoken outside Europe. The high number of Arabic

speakers recorded partly reflects the fact that the questionnaire was widely

distributed among teachers at a university in the United Arab Emirates, while

the number of Spanish speakers may reflect the high response rate amongst

US-based ESL teachers teaching students who have migrated from Central

and South America.

5.13.   Question 14: If you were responsible for designing a Portable Electronic Dictionary, what features would you include?

One hundred and fifty-four respondents answered this voluntary question, with 56 (36% of total respondents) choosing to skip it.

Many of the features that respondents thought would be useful in PEDs – such as pronunciation examples – are already commonly present. While many responses revealed that teachers were familiar with PEDs and how they work, other responses such as "audio examples (I don't think dictionaries have these), synchronised with definitions" or (using the same example of audible pronunciation models) "I once had a student in Japan who had a button on her dictionary which allowed her to hear the word spoken by a computerised voice. Good idea!" showed that, as Stirling suggests, there is a widespread lack of knowledge of what PEDs can commonly do, and possibly a need to raise awareness of the range of features currently available. One response from the USA demonstrated the wide gap between the worlds of EFL and ESL, and the almost universally-ignored fact that many ESL learners are not literate in L1. The respondent wrote: "students have too low literacy to know how to use a dictionary and are too poor to buy them".

Several responses to this question were off-topic but revealed the respondents attitude to PEDs and their usage. More than one response such as "the ability to silence it" or "a button you can press to stop them beeping every time students look up a word in class!" suggested that teachers found sound spillage from PEDs to be a nuisance. One respondent wrote: "they are

neither allowed in my classes nor my lessons!" (a curious distinction), while another wrote that the feature they would like to see was "self destruction". It should be pointed out however, that these are isolated examples; the great majority of respondents engaged with this question enthusiastically, and made thoughtful and useful replies. Another US respondent, with a predominantly Spanish speaking class, owned a Spanish/English PED herself, and used it as a teaching aid.

Several respondents commented on the poor quality of the internal voice in PEDs and wondered if this could be improved on. As pointed out above, both Stirling (2003) and Tang (1997) found the voice options on the PEDs they examined to be of poor quality. However, Stirling also found that teachers did not like spoken pronunciation facilities. Data in the current study suggests, again, that attitudes may have changed in the short period since Stirling's study, although some respondents disliked the fact that the PEDs they had encountered used AmE rather than BrE models of pronunciation. (In a field interview with Chinese-speaking students at the University of Salford, several demonstrated PEDs which claimed to feature both British and American pronunciation options. In fact, to the writer, what was supposed to be an American model sounded very much like a Chinese L1 speaker approximating AmE pronunciation).

One respondent commented on the need to consider how a learner would use a PED:

"First, it depends on the purpose a teacher has to design it. If the purpose is to teach beginners I need to design a dictionary with two parts: one part with single vocabulary, the other part with functions of the language in order to help the students to communicate. For example: " I don't understand" "No entiendo", or " Could you repeat it please?" "Puede repetir, por favor?. I think we should teach how to communicate from the beginning of the process."

Many interesting suggestions for features a PED might include were made. The following table summarises the common themes:

Feature	Respondents
Pronunciation Features	
audible pronunciation	28
phonetic transcription	19
pronunciation help – methodology not specified	27
Lexicographic features	
advanced look up	23
based on Established paper dictionaries	5
concordancer	3
large lexical base	7
monolingual functioning	21
pictures	10
supports international scripts	2
synonyms/thesaurus	20
word frequency	7
Language Features	
antonyms	6
collocation	27
different world Englishes	7

grammar features	8
idioms	8
parts of speech	20
phrasal verbs	6
sample sentences	48
specialist language	3
usage	17
usage examples	8
<u>Technical and ergonomic features</u>	
annotation	3
competitive purchase price	1
connectivity	5
improved display	7
language games	2
portability	5
silent function	5
student recording	2
video	2

Table 3– Common features teacher respondents would include in a PED. (Question 14).

The highest number of requests for a specific feature was the 48 for sample

sentences, almost double the next largest group. This may reflect teachers'

frustration at students' use of inappropriate words which they have retrieved

from PEDs; field notes for this study include an instance of a student using

the word 'mentation' inappropriately after consulting a PED. Certainly some

East Asian originating PEDs seem to contain nonstandard words, reflecting

the "strange derived forms and phrases" found in by Nesi (2003) in the *Jin

Shan Ci Ba* software tool.   Despite the handful of exasperated calls for silent

operation, audible pronunciation was seen by respondents as the second most

desirable feature of a PED. Advanced look up was the only other feature in

the top ten items which was exclusively centred round the technical

opportunities offered by the PED, with the other eight features chosen being

all possible to be made available in a paper dictionary. However, many

respondents had given thought to technical issues and some, particularly in

the area of advanced lookup facilities, took time to explain how their ideas

would work.

5.14.   Do your students bring Portable Electronic Dictionaries to class?

One hundred and seventy five respondents answered this voluntary, but

fundamental question, with the survey software reporting 86% saying **Yes**

and 17% **No**.   When these results were correlated against countries

respondent teachers recorded they were currently working in, a remarkable

level of consistency emerged (although, in some cases such as Argentina, or

Indonesia, this data is based on a single recorded entry, the same consistency

was seen in the UK, with 79 responses, and the USA with 62):

Country teacher is working in.	**Yes** – respondents record students bring PEDs to class.	**No** – respondents record students do not bring PEDs to class.
Argentina		100%
Australia	100%	
Canada	100%	
China	100%	
Colombia		100%
Cyprus		
Egypt		100%
Greece		100%
India	50%	50%
Indonesia	100%	

Iran	100%	
Italy		100%
Japan	100%	
Korea, South	100%	
Malaysia	100%	
Mexico		100%
Netherlands	50%	50%
New Zealand	100%	
Oman	100%	
Poland		100%
Saudi Arabia	100%	
Spain	40%	60%
Switzerland	75%	25%
Taiwan	100%	
Thailand	33%	66%
Turkey	33%	66%
United Arab Emirates	95%	5%
United Kingdom	97%	3%
United States	95%	5%
Uruguay		100%
Venezuela		100%
Vietnam	100%	

Table 4 Respondents recording that students do or do not bring PEDs to class, by country respondent is teaching in (Question 15).

Of the 13 countries in which 100% of respondents recorded that students

brought PEDs to class, 7 were in the Far East, and another two, Australia and

New Zealand, have large numbers of East Asian in-country EFL students due

to their geographical position. Two Arabic-speaking countries, Oman and

Saudi Arabia, were also included in the 13, while the UAE, based on a large

sample, had 95% of respondents recording PEDs brought to class. In the

Middle East Iran also scored 100% **yes**. In the other English L1 countries

sampled, the UK and USA, the results were 97% and 95% respectively.

Other European countries recorded far less penetration of PEDs, while the

three South American countries scored 100% **no.** Again, the impression

gained is of the significance of PEDs to students from East Asia and, to a

lesser extent, Arabic Speakers.

5.15. In an average class, what proportion of students bring Portable Electronic Dictionaries?

One hundred and sixty-five respondents answered this voluntary question.

The results are shown below:
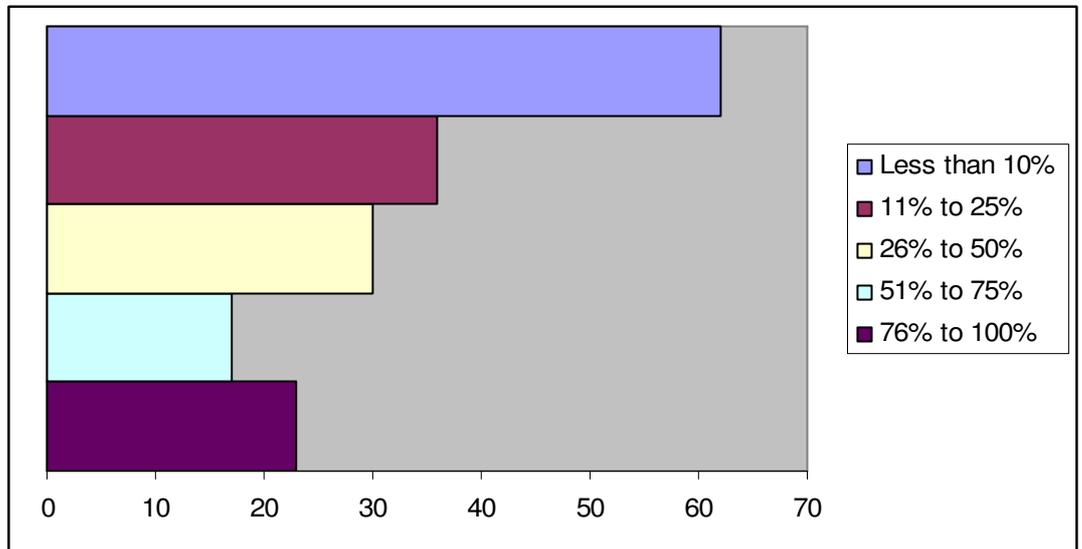
Chart 13 – Percentage of respondents who reported students bringing PEDs to class.

Given the variety of differing contexts in which respondents worked, and

in particular the mix of monolingual and multilingual groups taught, this

data may not be open to useful interpretation.

5.16.   Question 18; Most Portable Electronic Dictionaries can be used in Monolingual or Bilingual mode. Which mode are your students most likely to use?

One hundred and sixty seven respondents answered this voluntary question. The small number of **don't knows** is encouraging, and suggests that awareness of how students use PEDs may be growing. The overwhelming impression is that respondents' students are using their PEDs in bilingual rather than monolingual mode.
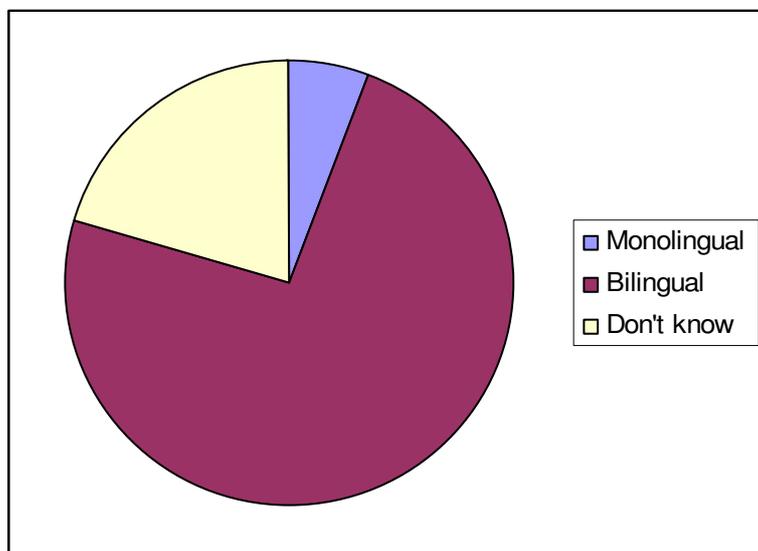
Chart 14 – Bilingual and monolingual PED usage.

5.17.   Question 19; Do your students use audible pronunciation help functions?

One hundred and fifty-seven respondents answered this voluntary question, with 55% stating that their students did use audible pronunciation functions. The seven respondents who left comments mainly bore out the criticism of pronunciation functions in Nesi, Stirling

and Tang's papers or revealed a lack of awareness of student usage, but with one very positive comment:-

- the pronunciation is often unintelligible

- American pronunciation is used

- No 'don't know' option here. I really don't know if they do. (This response suggests that a better question would have been "do your students use audible pronunciation help functions *in class*?)

- I think they use it, but I don't often year them. I just hope it's done well!

- it's annoying to other students at times

- Some do and it's a great help to them; others pronounce phonetically as if words were Spanish

- The pronunciation is often too quick and garbled.

5.18. Question 20; If your students bring Portable Electronic dictionaries to class, how does this affect your teaching?

Seventy-six percent of respondents chose to answer this voluntary

question.
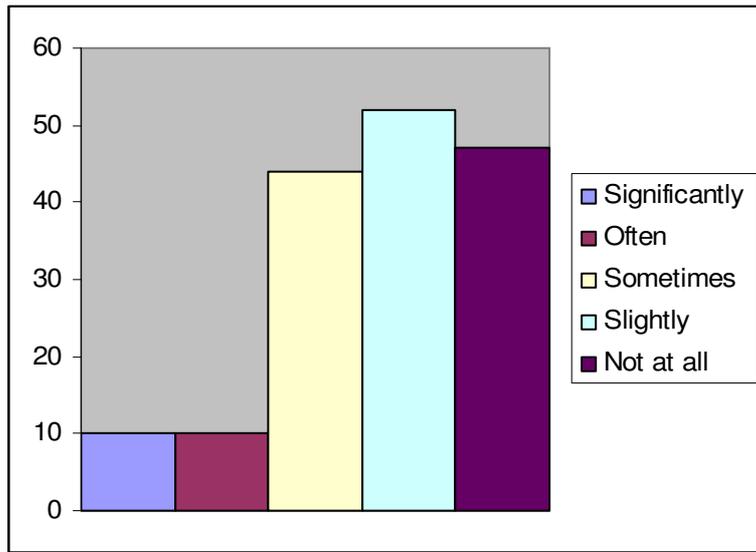
Chart 15 – Do PEDs affect your teaching?

The results here suggest that the majority of respondents did not feel

PEDs had a major effect on their teaching or classroom management,

although it seems likely that some competent teachers would not wish to

record that students bringing PEDs to class caused them problems.

However, a significant number of respondents did say that students' use

of PEDs had *some* affect on their teaching.

5.19.   Question 21; Have you ever found students' use of Portable Electronic Dictionaries to be disruptive to your teaching?

One hundred and sixty-three respondents chose to answer this voluntary
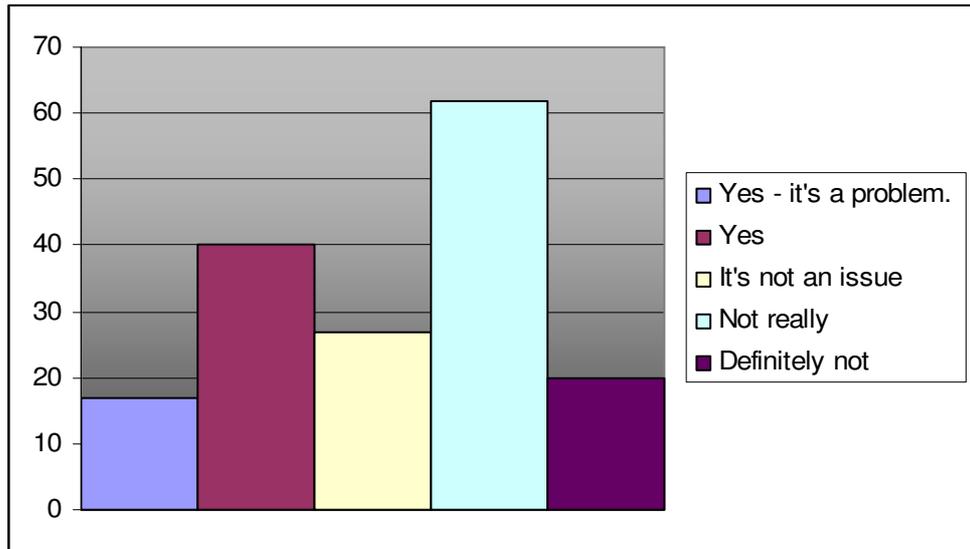
question.

Chart 16 – Are PEDs disruptive?

While nearly 50% of respondents said that students using PEDs has 'not

really', or 'definitely not' been disruptive, 34% said that it had, with 10%

saying that this had been a problem.

5.20.   Question 22; Do you think students using Portable
Electronic Dictionaries has a positive effect on their learning?
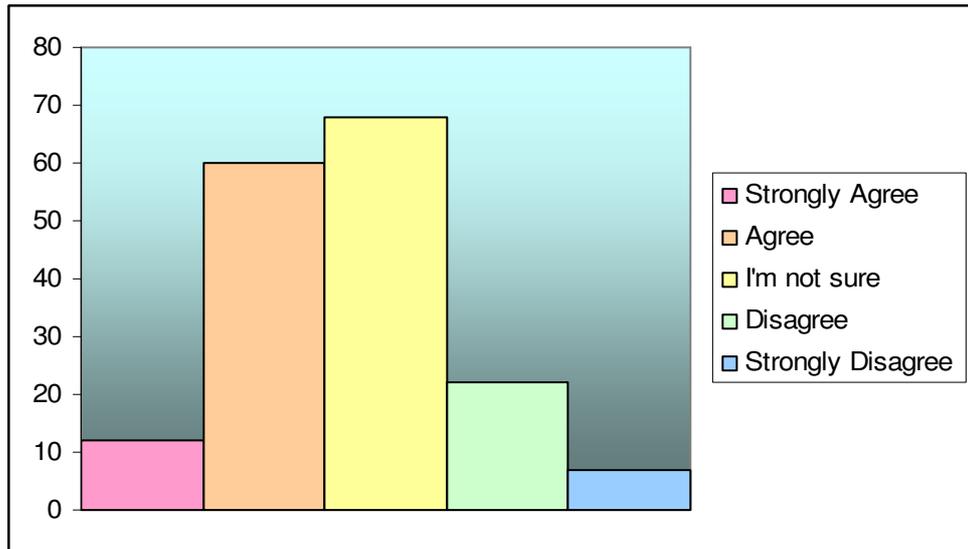
Chart 17 – Can PEDs have a positive effect on learning?

Although a large number of respondents felt that this was possible, the

greatest number took the 'not 'sure' option suggesting that many teachers

have not given thought to the effect PEDs might have on language

acquisition.

5.21.   Question 23; Have you ever told students not to use their
Portable Electronic Dictionaries in class?

One hundred and sixty-two respondents answered this question, with 62%

saying that they had told students not to use PEDs in class.

5.22.   Question 24; Have you ever carried out a classroom activity specifically designed to exploit students' use of Portable Electronic Dictionaries?
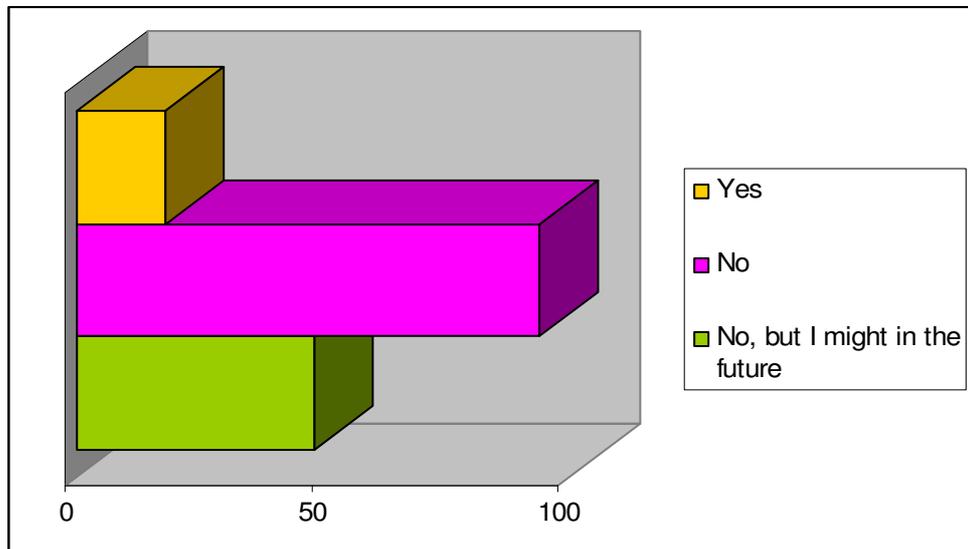
Chart 18 – Have you ever carried out a classroom activity specifically designed to exploit students' use of Portable Electronic Dictionaries?

Only 11% of the 164 respondents to this question said they had actively exploited students' initiative in bringing PEDs to class. Of the 89% who had not, only 33% said they might do this in future, with the inference being that the other 77% would not.

This question included an option for respondents who said 'yes' to describe the sort of activity they had carried out.   The six results were:

Response	Comment
a simple worksheet showing how dictionaries in general have more than one definition for many words and how important it is to discern the correct one	This is one of the few examples of proactive dictionary training recorded in the questionnaire.
Asking them to spell-check what I write on the board... having them read definitions	An activity shared by the writer when encountering spelling mental blocks.
I give a list of words for them to translate, which seems to be easier with the portables, then discuss results.	The suggestion with these two responses is that these teachers are aiming at raising awareness of the difficulties involved in finding the correct definition.
Yes, with bilingual, a few years ago. To show how can sometimes be misleading	
for difficult vocabulary in reading texts	It is interesting that this respondent sees this as his initiative. Are PEDs banned in all other activities in his class?
Team vocabulary race--focus on team building and distribution of workload.	It would be interesting to learn more about how this race works. Is this activity dependent on all participants having their own PED, and do those with better models have an unfair advantage?

Table 5 Have you ever carried out a classroom activity specifically designed to exploit students' use of Portable Electronic Dictionaries?

5.23.　　　Question 25;　Does the institution where you do your main teaching have a policy on student use of Portable Electronic Dictionaries?

There were 168 respondents to this question.　The great majority (82%) said that their institution did not have a policy on PED use, while 10% worked for an institution that did have a policy and 7% did not know.
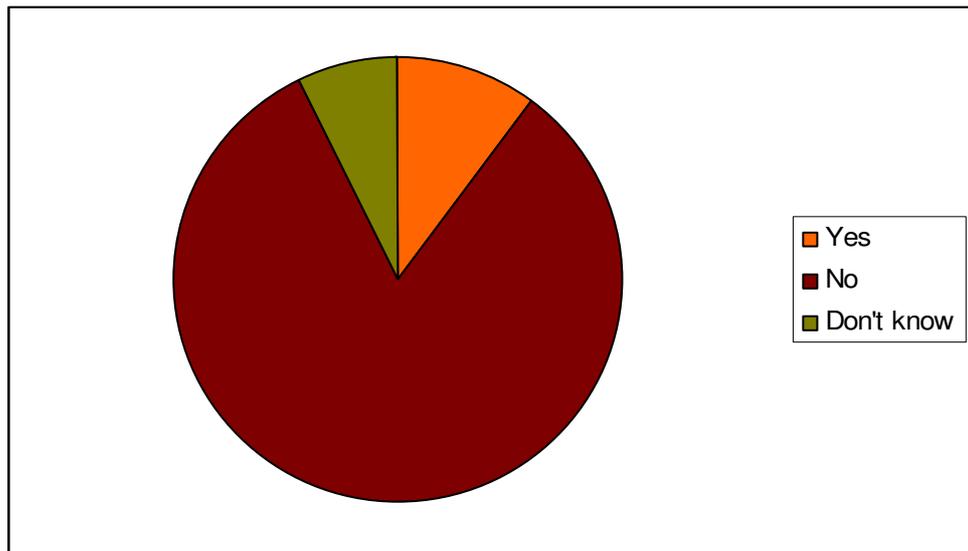
Chart 19 – Does the institution where you do your main teaching have a policy on student use of Portable Electronic Dictionaries?

Respondents who stated that their institution did have a policy were invited to comment.　Four out of the five comments were that their institutions banned students from PED use during examinations.　The fifth respondent stated that 'most teachers' do not allow PEDs in class, and that students are encouraged to use online dictionaries in the computer lab instead.　This respondent, based in the USA, was also in the minority who felt PEDs were significantly disruptive (question 21).　A US respondent to question 27 also gave an interesting response which should be recorded here:

"There is wide variability in the use of electronic dictionaries. One peculiarity of our state is that only students whose first language has a different orthography from English may use electronic dictionaries on state-mandated tests".

This seems a curious policy and it would be interesting to know the thinking behind it. This question was partly included because of the writer's experience of working in a UK Further Education College where students are officially banned from bringing PEDs into the classroom; the survey suggests that this is unusual.

5.24.   Question 26; In class, which students are more likely to make use of Portable Electronic Dictionaries?

One hundred and fifty-nine respondents chose to answer this question, in which respondents were asked to choose between stronger and weaker students. While 46% felt that there was no difference in whether PEDs tended to be used by stronger or weaker students, three times as many respondents felt that weaker students were more likely to use PEDs.
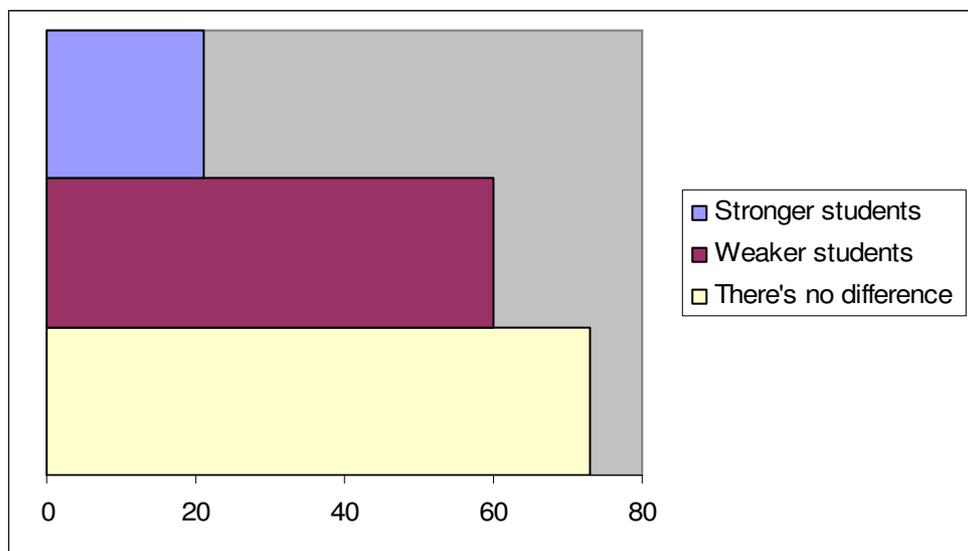
Chart 20 – In class, which students are more likely to make use of Portable Electronic Dictionaries?

Eight respondents took up the offer to record further comments. None of these were wholly condemnatory, and three suggest use of a PED is the mark of a motivated learner:

Response	Coding
Chinese students resort to their e-dictionaries to avoid interrupting.	Cultural
who can afford,who has	Status symbol/money
those whose parents buy all new gadgets, no matter if they use them or not	
Students who are more motivated, despite their language level, use elctronic dictionaries.	PEDs are used by well-motivated learners.
striving students	
Stronger students try to understand EVERYTHING; weaker students are more passive & use no dictionary for the most part	
I'm not really sure about this.	Zero data.
Unable to judge as so few appear to use them	

Table 6 Do stronger or weaker students use PEDs?

In addition to the data in this question, 16 respondents to Question 27 felt

that PEDs were mainly used by weaker students.

5.25.   Question 27; You are invited to give any further comments
        you wish on Portable Electronic Dictionaries and their use in the
        EFL/ESL classroom.

One hundred and nine respondents added further comments which

covered a range of topics. Some comments are quoted elsewhere in this

text. Full response data for this question can be downloaded as an MS

Excel spreadsheet from

http://www.bankgatetutors.co.uk/PED_survey_comments.xls. The trends

are summarised below:-

Category/coding	Number of responses
Pedagogy	
demotivating	2
less useful at higher levels	2
all dictionaries are a waste of time as learning tools	2
part of classroom activities	4
comforting for students	4
students need to use with care	7
detrimental to learning process	8
training needed	8
monolingual preferred	9
distracts from work of class	12
teacher restricts use	13

used by weaker students	16
paper dictionaries are better	5
Features of PEDs	3
audio a bad thing	1
audio a good thing	1
easier to use than paper	5
expensive	28
inaccurate definitions given	8
just the same as paper dictionaries	10
overused	6
quality varies	2
status symbol	3
portability an advantage	5
easy to use/fast	
General Points	25
general positive comment	8
general negative comment	3
respondent owns a PED	4
opinion has changed	3
PED possession a mark of motivation	4
Resistance from other teachers witnessed	

Table 7 Further comments (question 27)

Significant numbers of respondents felt that PEDs distracted from the work of the class, tended to be used by weaker students and were overused. Twenty-five percent of respondents believed that the definitions PEDs gave were inaccurate. Twelve percent of respondents volunteered the information that they restricted PED usage in their

classes. Very positive comments came from the three respondents who

owned and used PEDs themselves.

*5.26.   Questions 28 – 31 were included to assess respondents'
      general opinions about the role of translation in vocabulary
      learning.*

5.27.   Question 28; Do you think that translation should be
      encouraged or discouraged in class?
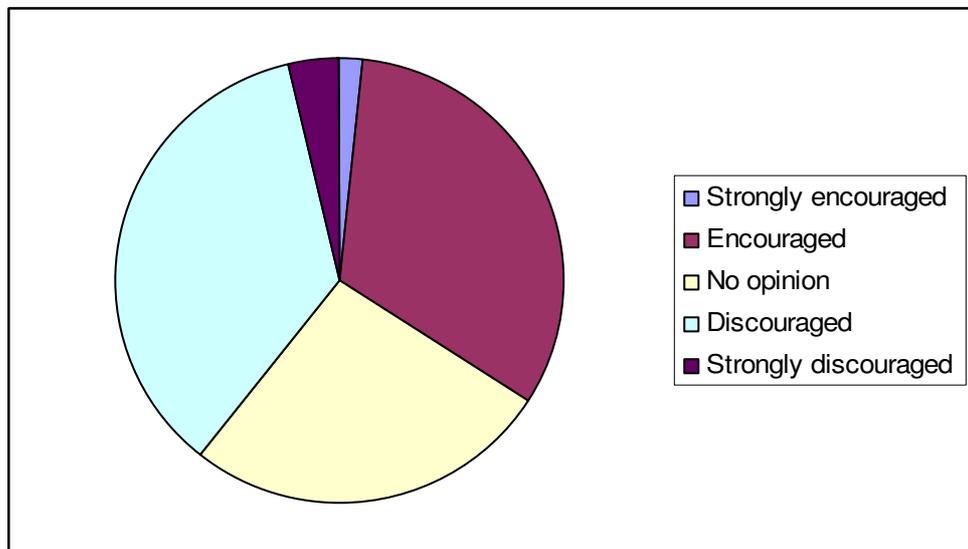
**Chart 21 – Do you think that translation should be encouraged or discouraged in
class?**

Seventy-eight percent of respondents answered this question. The results

show a fairly even split between respondents who felt translation should

be encouraged and those who wished to discourage it, with smaller

numbers opting for extreme opinions.

5.28. Question 29; Translating into L1 is a useful strategy for vocabulary development.

The same percentage of total respondents as question 29 answered this

question, though the spread of opinion was far more marked, with more

than 50% of respondents either agreeing or strongly agreeing that

translation *was* a good strategy:
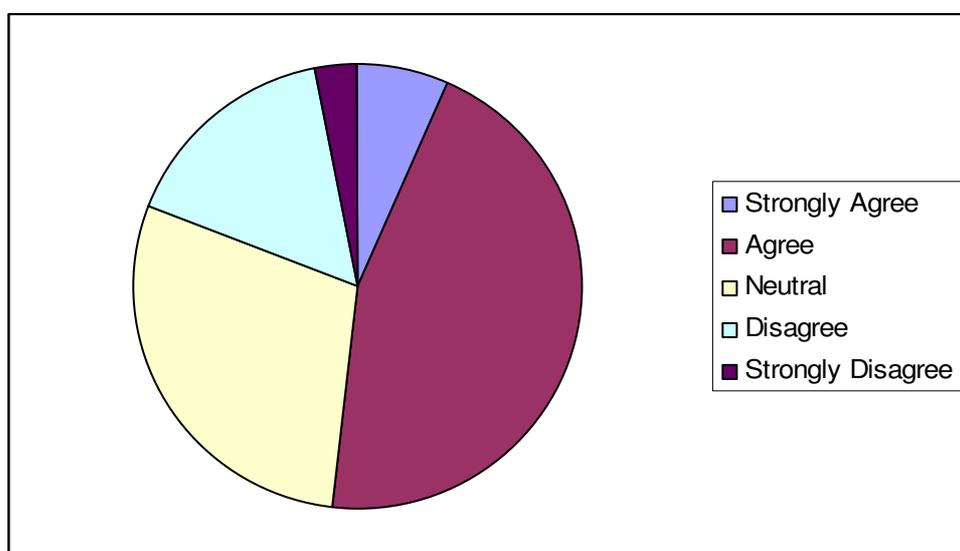
Chart 22 – Translating into L1 is a useful strategy for vocabulary development (question 29).

5.29.   Question 30; It is important to hear words to understand them.
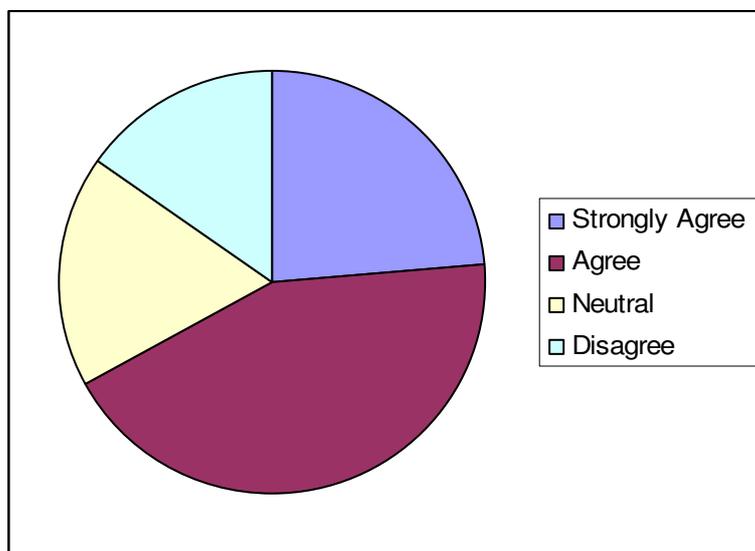
Chart 23 – It is important to hear words to understand them (question 30).

Surprisingly 68% of respondents either agreed or strongly agreed with this question. This may be due to the choice of the word 'important'.

Only 16% of respondents felt that meaning and phonology are not interrelated and selected 'disagree' and no respondents disagreed strongly.

5.30.   Question 31; Bilingual definitions are helpful to vocabulary learning.
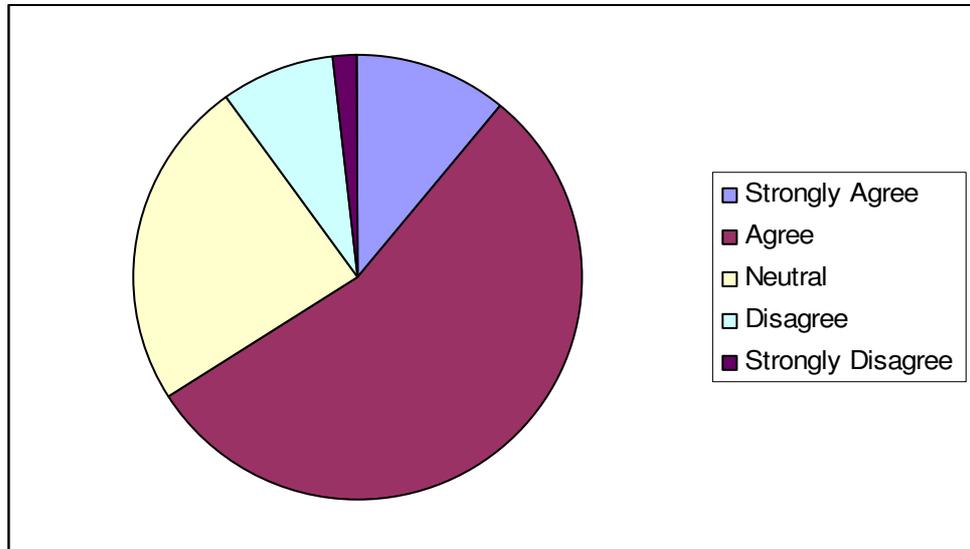
Chart 24 – Bilingual definitions are helpful to vocabulary learning (question 31).

Despite emphatic statements in the 'further comments' section of the

questionnaire over the superiority of monolingual dictionaries and the

undesirability of bilingual dictionary use, 67% of respondents agree or

strongly agree with this statement.

5.31.   Question 32; Would you like us to email you the results of the survey?

One hundred and twelve respondents (53%) asked to be sent the survey

results.

Students' use of Portable Electronic Dictionaries in the EFL/ESL Classroom; a Survey of Teacher Attitudes.

Chapter 6 – Discussion and Findings

6. Discussion

In this chapter the main themes which have emerged in the literature and from the survey are identified and discussed.

6.1. Some students use PEDs more than others

Respondents to the questionnaire, together with some of the authors quoted, identified students from East Asian countries as being more likely than others to bring PEDs to class. Arabic-speaking students, who share with East Asian students the issue of an L1 which uses a different script from the target language, are another sizable group who bring PEDs to class. Not all divisions in PED user group are based on first language; while none of the respondents teaching in Central and South America had encountered PEDs, they were not uncommon with Spanish-speaking ESL students in the USA.

6.2. Is translation a bad thing?

"The other big issue of course is what we feel about translation... I personally feel that to learn a language with little or no translation is what makes a person fluent …" Questionnaire respondent.

Translation and its place in the classroom are themes which the authors discussed and the respondents to the questionnaire returned to on a number of occasions. EFL/ESL teacher trainees learn from the first

session of their certificate level instruction that translation in the classroom is frowned upon and to be discouraged. Modern Second Language Acquisition theory can point to sound reasons for this approach; we are attempting to teach learners to function in the target-language and in the case of EFL/ESL we want our learners to think and work in English, not to constantly mediate language via translation back to L1. Furthermore, we seek a direct connection between linguistic information and meaning; the target-language does not only acquire validity according to how well its contents map onto L1. Often a neat mapping does not occur (and the greater the linguistic distance between L1 and the target language, the more likely it is that it will not) and we want our students to accept and understand that this is how languages work.

Beginner teacher trainees are taught about the 'Direct Method', the concept first discussed in the nineteenth century (Howatt 1984) and partly a reaction to Grammar Translation methodology, that instruction in the target-language will be given in the target-language. To let them know what this feels like trainees are usually given a direct method lesson in a language they are unlikely to have previously encountered; this writer has seen lessons given in Basque and Norwegian and given one himself in Greek. However, a strong case can be made that the direct method is actually a necessity posing as an ideology. In the majority of EFL/ESL classes taught in target-language countries (and this tends to be the context which TESOL courses concentrate on) there are a mixture of

differing L1 groups. In the questionnaire up to ten responses were allowed for question thirteen, which asked respondents to record the L1 profile of their students. Many respondents used all ten categories, and there was a clear correlation between the number of languages recorded and whether or not the teacher was working in the target language area, with those teachers who were in it having more language groups represented in their classes.

There is little point in the teacher being able to speak any one of their students' languages, if (s)he cannot speak them all. In these circumstances, the teacher who does speak a language used by some, but not all, of the students in their class, can sometimes see this as a *problem.*

PEDs present us with a new translation paradigm. Where PEDs are brought to class and we do not restrict their usage, translation is going to happen whether we like it or not. A major issue is that with the pattern of usage amongst differing L1 groups currently being seen, such translation is not available to (or sought after by?) all students.

And yet there seems to be strong evidence (Grace 2000, Nation 2001) that where students are allowed to translate target language lexis, retention is improved. The issue may then seem to be that in a future where some but not all students choose to bring PEDs to class, there may be a misbalance of opportunity. Also worrying is that the idea that language groups in a class may be more inclined to form cliques on L1

divisions, and that the essential negotiation of meaning (Long 1983), that takes place where students without a common language work on a meaning challenge together, may be partly lost.

6.3. Do students use PEDs to withdraw from the work of the class?

Several questionnaire respondents indicated that PEDs were used by students who wished to withdraw from the work of the class, and that using their PED could be seen as both a means of doing this and justification for counterproductive behaviour:

"Often it's the students [who use PEDs] *who don't appear to have a sense of what is going on in class anyway - … rather than stay involved in the class, they seem to retreat into their own world."* Questionnaire respondent.

Certainly the writer has witnessed similar behaviour, as this field note indicates:

" five minutes into a fifteen minute timed writing activity, and after skim and intensive reading phases, and my explaining that understanding each word is unnecessary to the activity, Andy is still using his PED to check words in the source text and hasn't yet put pen to paper".

While teachers do see this sort of behaviour, it begs the question as to whether students who wish to disengage from the work of the class would

have done so anyway.   Possession of a PED does not cause

disengagement, although it could be suggested that by providing a

diversion which the bored or distracted student can tell themselves is a

valid learning activity, it facilitates it.

Where respondents own and use PEDs themselves, their attitude seems to

change. The following extract is from an email from a TESL-L list

member who went on to complete the questionnaire:-

*"I have one of those dictionaries ~ I love it, even though it was expensive,
I use it as a teaching tool in class. I am in Korea ~ most* **serious** *Korean
students use them too."* (My emphasis).

This teacher sees use of a PED as being the mark of a strong and well-

motivated student, an opinion shared with three respondents to the

questionnaire. It would seem that while some teachers view PEDs as

being primarily a means of distraction for unmotivated students, this

opinion is by no means universal, and as this further quotation from the

TESL-L member above demonstrates, other approaches are possible:

*"At our university, we encourage students to use electronic dictionaries.
The speed and ease of looking up words helps students verify that the
word meant what they thought it meant. Students would never take the
time to do this with a paper-based dictionary".*

6.4. Is it true that PEDs do not help, and may hinder, learning?

Two criticisms of PEDs as language learning aids come out of the
literature and questionnaire responses:

- They encourage a belief that exact translation is possible and
  perfect cognates exist in the student's first language and the
  target-language;

- They reinforce an educational conditioning which leads students
  to believe that the most important part of language learning is
  'knowing' as many words as possible. This can be achieved by
  looking up each and every unknown lexical item and by rote
  learning.

In the second model, learning a language is seen as being like cramming
facts for an examination; the language can be mastered in the same way
that dates and names of kings or politicians can be learnt for a history
exam. But any EFL/ESL teacher knows that this is not how languages
are learnt; there is no point introducing a given grammar point and
expecting students to be able to use it perfectly immediately. Rather, new
language is introduced, returned to and reinforced, as students grow
confident with it. As one respondent puts it:

*"… in reality students have learnt in very artificial ways and most of
what we do is not straightforward learning/teaching etc. but unlearning
and reteaching........"*

This process of returning to language and progressively 'fine tuning' it,
forms the basis of Krashen's much discussed 'monitor model'. (Ellis
1990)

In the same way new vocabulary is learned by repetition, conditioning and the process of 'noticing' (Nation 2001 and Krashen in Ellis 1990).

A fear expressed by a number of questionnaire respondents, is that by bringing PEDs or any other form of dictionary into the classroom, students do not take part in the shared discovery of new meaning. Many respondents indicated that they do restrict PED usage on occasion, and this would seem to be a very valid justification for such an approach. As one respondent wrote:

"if they don't know a word, others might not either and they can help everyone by asking".

Another theme which arises from the literature is that PEDs' speed of use is detrimental to the learning process, while more complex operation involved in a paper-dictionary look up is beneficial to it. As one respondent to the questionnaire puts it:

"I think that like most things in life the cliche 'Easy come, easy go' is highly appropriate to the learning process and the acquisition of new vocabulary. Meaning quickly discovered …, I would argue, is very quickly forgotten. Vocabulary that is deduced in a logical, cognitively challenging way will not be forgotten so easily - effort after meaning".

Little empirical evidence seems to have been presented to support this view and it remains open to further research.

6.5. PEDs present a poor model of language.

In the further comments section of the questionnaire 28 respondents wrote that PEDs provided inaccurate definitions, with some respondents giving examples. This is clearly a serious drawback for PED usage. While it is possible to improve students' usage of PEDs, for example discouraging them from selecting the first translation or definition they find, little can be done if that translation of definition is wrong. It is to be hoped that if this is a widespread issue with PEDs, it will be resolved with time. Certainly where PEDs have lexical databases based on respected paper-dictionaries such as the Oxford English Dictionary, one would not expect to find inaccurate definitions.

This writer has not encountered PEDs which gave inaccurate definitions, but has frequently seen students accessing inappropriate words through using one (See 5.13). Rather than inaccuracies however, misleading omissions are sometimes found. The writer asked a small group of PED using students to look up a series of verb/noun pairs differentiated by syllable stress, including *desert, refuse and record,* and to demonstrate the audible pronunciation assistance function for these words on their PEDs. In all cases only the noun form was reproduced, even when the PED display was showing a definition of the verb form.

6.6. Training in PED usage improves student performance.

This message comes across clearly from both the literature and questionnaire responses. How such training should be organized is a matter for further discussion, however simply taking activities aimed at improving students use of paper-based dictionaries, and applying these activities with a class of PED users, would be to ignore the very real differences between PED and paper dictionaries, and a missed opportunity to exploit PEDs potential for advanced look-ups, fast access, and non-sequential structure. However, formalized training activities are not the only way to improve a class's use of PEDs, and rather depend on the teachers having a good knowledge of how PEDs work. The questionnaire suggests that such knowledge amongst the generality of teachers may be some way in the future. The writer has found that taking an informed interest in how his classes user PEDs, asking for feedback when students reach for them during an activity, and using techniques such as back translation, has raised his students' self awareness of how and why they use PEDs. The students have also become aware of some of the limitations the devices have through using them in partnership with the teacher, rather than having to be given the rather heavy-handed sounding instruction which some questionnaire respondents reported. With bilingual dictionaries there would seem to be a very real danger of the teacher appearing to tell his students that he knows more about how PEDs work than they do; unless the teacher shares a common L1 with his

students this is unlikely to be the case. One respondent put this idea in these terms:

"I feel many native English EFL teachers (at least) are unfairly negative about them. I think this is partly because we do not have access to them, we cannot easily/fairly evaluate them because we are generally not proficient in the two languages and because of our lack of familiarity".

6.7. PEDs may make students feel more comfortable in class and may be seen as a sign of an autonomous approach to learning.

Stirling (2003) and Tang's (1997) findings on this idea are discussed at 3.2 and several questionnaire respondents made similar point such as '*students love and believe in their electronic dictionaries*'. But while some respondents discussed their marked dislike of PEDs, or described their approach to controlling their use:

"I collect them at the door from the students who are inclined to use them...I think they are a great resource for students on their own, but they do not contribute to the classroom experience".

or this from a TESL-L member, responding to Johanna Stirling's 2003 posting:

"I definitely discourage to the point of collecting all of them in a basket for pickup at the end of class".

There were expressions of a more laissez-faire approach:

"I haven't paid a whole lot of attention to these machines, considering them the personal learning tools of the students, which they believe help them (and if they believe so, that usually makes it so)…"

or this very much more forceful response:

"What difference does it make if they use electronic or book form dictionaries? … I have colleagues who are uptight about dictionaries that translate languages; they are ok with English/English but not, for example, Japanese/English. I have found that students need translating dictionaries to begin with. The more advanced they become in English the more they use English only dictionaries on their own. When students have enough competence and confidence they move away from dictionaries on their own. None of this should be a forced issue. Who are we? God to decide how students will learn?"

This final question may well be fundamental. As discussed elsewhere, the decision to bring a PED to class or not lies with the student, not the teacher. It may be that some teachers find this sharing of control uncomfortable.

Chapter 7 - Conclusion and recommendations for further research.

7. Conclusion.

Attitudes towards PED use are changing. Only two years ago, Stirling (2003) revealed an overwhelmingly negative feeling amongst teachers towards PED use in the classroom. The current study shows a definite move toward acceptance and in some cases embracing of the possibilities PEDs have to offer.

Several authors, and several respondents to the questionnaire, point out that by overusing PEDs students were not developing language skills in areas such as guessing meaning from context, which would allow them to function in the absence of their PED. The issue here may, however, be that with increased use of PEDs, together with the growth of English as a Global Language (Crystal 1997), students may never need, or attempt, to function in the target language without having access to a PED. Here a parallel can be drawn with the debate over school students' use of pocket calculators some decades ago: if complex mathematical calculations can be carried out at the touch of a button, why bother to learn long division? By the same token, if by carrying an (increasingly sophisticated) PED when traveling outside the L1 area, or encountering the target language at home, a translation of any vocabulary item can be found, why bother to learn strategies to guess unknown words?

Although there are many very sound answers from the fields of both pedagogy and SLA to the last question, the reality of constant PED availability may effect the way teachers and materials writers think about how vocabulary is taught in

the future. Educational Practitioners and Theorists may also have to rethink their

attitude towards translation in the classroom.

One respondent to the questionnaire pointed out an extremely important situation

in which students have to wean themselves off PED usage and learn such

strategies:

"*as Ss gain in confidence all but the weakest learn to use* [PEDs] *judiciously.*

Since they're not permitted to use them in any entrance examination or public

examination because most have facilities for storing additional information and

calculator functions, Ss with an important exam on the horizon see the point of

developing strategies to remember vocab. and infer meaning".

Students are now allowed to bring pocket calculators into the mathematics

examination room. Who can say that PEDs may not follow one day?

A further aspect of the growth in PED usage is that it has been a bottom-up

movement. It is students, partly driven by the marketing efforts of new

technology companies, who have chosen to bring these devices to class in

increasing numbers. In this research I have found hardly any instances of

teachers recommending or encouraging their students to buy and use PEDs; only

Stirling (2003) includes a list of 'make the best of it' features to be suggested

should a student approach their teacher for recommendations on what sort of

PED to buy. That PED use is to a greater or lesser extent changing the nature of

the classroom space is not a development that has been fostered by

educationalists, it is student-led. It is conceivable that this lack of control over change is at the root of some teachers misgivings about PEDs.

Just as teacher's attitudes may be shifting, the writer's own opinion of the value of PEDs in the classroom has been changed through working on this study. There are still instances in which students looking up lexical items unnecessarily can be seen as counterproductive, but given thought PEDs can be used very constructively and made to work with, rather than against, the flow of the lesson. PEDs are not going to stop appearing in our classes; how we use them to help our students learn is up to us.

8. Recommendations for Further Study

- Although a field notebook was kept during the course of this study, further investigation of how students use Portable Electronic Dictionaries would benefit from detailed observation and standardised classroom experiments. One possibility would be to conduct an Action Research experiment; an experiment could be to set up with three similar groups given the same task based around collaborative writing. One group are allowed the use of PEDs, the second are allowed Paper Dictionaries, while the third carry out the task without dictionaries. All groups could be observed (possibly after being videoed) and a quantitative analysis made of how often they reach for paper dictionaries compared with PEDs. Later testing could examine retention across the three groups.

- Thirty-five percent of questionnaire respondents said that they had found PED usage disruptive to their teaching. Further research to examine in what way PEDs can be disruptive would be very valuable.

- Further data correlation could be done on the results of the current study, looking at, for example, whether PED usage is more prevalent amongst students in a particular age group than in others.

- Further work to examine how PED use differs in and out of L1 environments.

- Work on the theory that the harder it is to look up a word, the more chance there is of it being retained. Again, a parallel experiment could be set up comparing groups' usage of PEDs and paper-based dictionaries.

- Creation of a short, standardised set of lexical items which could be used in comparing the lexicographic effectiveness of different PEDs. Three examples from Bahn's corpus collection of collocations, which could be used for such testing are: bear + responsibility; admit + defeat and take + blame. Other items could look at preposition use: abscond with, absent from, accuse of, an advantage over, advice on; check on unusual words or compare audible pronunciation quality and accuracy.

- More work by researchers who, like Tang, *begin* with an understanding of what PEDs do, or share an L1 with their students, into how exactly students use PEDs in the classroom. As a small step in this direction the writer intends to buy a multilingual PED offering translation into a variety of European languages.

- Further research which compared students' use of Electronic Dictionaries across productive/receptive or spoken/written skills divisions would be valuable, especially given that two of the authors discussed, Nesi (2003) and Tang (1997) found conflicting results on this issue.

Bibliography

Aiko Trading Company advertisement for *Canon Wordtank G50 Japanese Electronic Dictionary* at http://store.aikotradingstore.com/cawog50.html, accessed 15/1/05.

Amritavalli *Dictionaries are unpredictable* ELT Journal 1999 53(4):262-269

Aust, R., Kelley, M. J., & Roby, W. B. (1993). The use of hyper-reference and conventional dictionaries. *Educational Technology Research & Development, 41,* 63-73, cited in Laufer and Hill, below.

Batenburg, John, D., *English monolingual learners dictionaries. A user oriented study*. Tübingen: Niemeyer.1991.

Bell, Judith 1993. *Doing your research project: a guide for first time researchers in education and social science*, Oxford, Oxford University Press

Bolinger, D., 1990. Review of Oxford Advanced Learner's Dictionary of Current English. *International Journal of Lexicography* **3** 2, pp. 133–145 , quoted in McAlpine and Myles, (2003), cited below.

Collison, R L, 1982 *A History of Foreign-Language Dictionaries,* London, Andre Deutsch.

Crystal, D, 1997, *English as a Global Language,* Cambridge, Cambridge
University Press

Cunningham, S, Moor, P et al *Cutting Edge: A Practical Approach to Task
Based Learning* 2003 London, Longman. (Series).

Dodd, S, *Lexicomputing and the Dictionary of the Future*, In James, G (ed),
Lexicographers and their Works, 1989 pp 83 – 93, Exeter, University of Exeter
Press.

Dörnyei, Zoltàn and Thurrell, Sarah, *Strategic Competence and How to Teach it*
ELT Journal Volume 5 Number 1 January 1991.

Ellis, R 1990. *Instructed Second Language Acquisition* Blackwell, Oxford.

Flowerdew, J. and Miller, L., 1995. On the notion of culture in L2 lectures.
TESOL quarterly 29 2, pp. 345–373

Garfield, E Reflections on Learning Foreign Languages Part II, Electronic
Translators, in *Current Comments* 38 p 5 – 9 September 1979, reprinted in
Essays of an information scientist Vol. 4 p 275. Philadelphia: ISI Press 1979.

Grace C A, Gender Differences: Vocabulary Retention and Access to
Translations for Beginning Language Learners in CALL. *Modern Language
Journal*, Summer 2000, vol. 84, no. 2, pp. 214-224(11).

Gu (1994). Vocabulary learning strategies of good and poor Chinese EFL learners. In N. Bird, P. Falvey, A Tsui, D. Allison, & A McNeill (Eds.), *Language and learning* (pp. 376 – 401). Hong Kong: Government Printer. Cited in Tang, below.

Hartmann, RRK (1992). Lexicography, with particular reference to English learners dictionaries. *Language Teaching 25,* 151 – 159. Cited in Tang, below.

Hockly, N and Dudeney, G 2004 Gender and IT / Internet Use in ELT (English Language Teaching): Questionnaire Results. Consultants-e web page at http://www.theconsultants-e.com/gender_survey/index.asp , accessed 30 April 2005.

Howatt, A. (1984). *A history of English language teaching*. Oxford: Oxford University Press.

Jacobs, George M., *Dictionaries Can Help Writing – if Students Know How To Use Them* ERIC ED316025 1989 accessed 14/1/05.

Krashen, S 1985. *The Input Hypothesis* London; Longman. Cited in Ellis, above.

Laufer, Batia and Hill, Monica, *What lexical information do L2 learners select in a CALL Dictionary and how does it affect Word Retention?* in Language Learning & Technology Vol. 3, No. 2, January 2000, pp. 58-76.

Laufer, Batia and Kimmel, Michal: Bilingualised Dictionaries: How Learners Really Use Them *System* 25, 3, pp 361 – 369.

Long, M 1983. Native speaker/non-native speaker conversation and the negotiation of meaning, *Applied Linguistics,* 4:126 – 41. Cited in Ellis, above.

Mackintosh, Kristen *'An empirical study of dictionary use in L2–L1 translation'* in Atkins, B. T. S. (Ed.). (1998). *Using dictionaries: Studies of dictionary use by language learners and translators*. Niemeyer: Tubingen.

McAlpine, Janice and Myles, Johanne, Capturing phraseology in an online dictionary for advanced users of English as a second language: a response to user needs in *System* Volume 31, Issue 1 , March 2003, Pages 71-84.

McCarthy, M, 1990. *Vocabulary* Oxford: Oxford University Press.

Naiman, N., Frohlich, M., Stern, H.H. & Todesco, A. (1978), *The Good Language Learner*, Toronto, OISE.

Nation, I S P, *Learning Vocabulary in Another Language*, Cambridge, Cambridge University Press, 2001.

Nation, P, *Retrospective Review Article: the Good Language Learner* in System 22 no 2 pp 269 – 280 1994.

Nesi, Hilary, 2003 *The virtual vocabulary notebook: the electronic dictionary as vocabulary learning tool.* Forthcoming in: Blue, G. (ed) Developing Academic Literacy, London: Peter Lang.

Roby, W. B. (1991). *Glosses and dictionaries in paper and computer formats as adjunct aids to the reading of Spanish texts by university students*. Unpublished doctoral dissertation, University of Kansas. Cited in Laufer and Hill, above.

Roby, W. B.(1999, January) What's in a Gloss? *Language Learning and Technology, 2*(2), 94-101. Cited in Laufer and Hill, above.

Schmitt *Vocabulary Learning Strategies* in Schmitt and McCarthy eds, Vocabulary: Description, Acquisition and Pedagogy, Cambridge, Cambridge University Press 1997.

Schneider, Klaus P, *Review of Bahns, Jens Kollokationen als lexicographisches Problem: Eine Analyse allegemeiner und spezieller lernerwörterbücher Des Englishen.* Tübingen: Niemeyer, 1996 and Trappes Lomax in System 26 (1998) 137 – 150.

Skehan, P, Individual Differences in Second-Language Learning, Edward
Arnold, London 1989.

Sobkowiak, Włodzimierz. *Beyond the Year 2000: Phonetic-Access dictionaries
(with the word frequency information) in EFL* in System Volume 22 number 4 pp
509 – 523, 1994.

Stirling, Johanna *The Portable Electronic Dictionary: Faithful Friend or
Faceless Foe?* The English Language Garden website, 2003 Bell Norwich, at
http://www.bellstudents.com/norwich/project10/portable_electronic_dictionaries.
htm, accessed 15/1/05.

Siu, Raymond, 2004, Review of MD8200 Electronic Dictionary at
http://www.cantonese.sheik.co.uk/phorum/read.php?6,31262,31262#msg-31262
accessed 6/5/05.

Swan, M & Smith, B. eds1997; Learner English: A Teacher's Guide to
Interference and Other Problems. (1st Edition) Cambridge: Cambridge
University Press. (Also 2001 edition cited in Stirling above).

Tang, G, 1997., Pocket Electronic Dictionaries for Second Language Learning:
Help or Hindrance? *TESL Canada Journal,* 15/1.

Taylor, A (1996). *Hong Kong teachers views on the use of e-dictionaries.* Paper-presented at AILA '96 International Conference, Jyvaskyla, Finland. Cited in Tang, above.

Tomaszczyk, J 1979. Dictionaries: users and uses, *Glottodidactica 12:* 103 – 19, quoted in Schmitt *Vocabulary Learning Strategies* in Schmitt and McCarthy, above.

Trappes Lomax, Hugh, 1997 *Oxford Learner's Wordfinder Dictionary*, Oxford, Oxford University Press

US Patent 4438505, 1984. Described at
http://www.freepatentsonline.com/4438505.html , accessed 6/4/05.

Weschler, R. and Pitts, C 2000 An experiment using electronic dictionaries with EFL students. *The Internet TESL Journal 6 (8)*
http://iteslj.org/Articles/Weschler-ElectroDict.html accessed 8/4/05.

Wilson, Ruth, 2001. *Evolution of Portable Electronic Books*, Ariadne Issue 29, UKOLN, available at http://www.ariadne.ac.uk/issue29/wilson/intro.html , accessed 6/5/05.

Xiaotang Cheng, Asian students' reticence revisited, *System*, Volume 28, Issue 3, September 2000, Pages 435-446.

Zöfgen (1994) *Lernerwörterbücherin Theorie und Praxis: Ein Beitrag zur*

Metalexikographie mit besonderer Brücksichtigung des Franzosischen Tübingen:

Niemeyer, 1996 cited in Schneider above.

Appendix

Appendix - Questionnaire results

United Kingdom 70 United States 47 Canada 14 Australia 12 Taiwan 7 China 5 Switzerland 5 Korea, South 4 New Zealand 4 Cyprus 3	Thailand 3 Uruguay 3 Brazil 2 Japan 2 Malaysia 2 Poland 2 Spain 2 Turkey 2 United Arab Emirates 2	Venezuela 2 Argentina 1 Belarus 1 Benin 1 Colombia 1 Czech Republic 1 Egypt 1 Finland 1 France 1	Greece 1 India 1 Indonesia 1 Iran 1 Ireland 1 Italy 1 Mexico 1 Netherlands 1 Qatar 1 Saudi Arabia 1

Table 8 Respondents' Country of origin with number of respondents per country (Question 2).

Short course	2
CELTA or equivalent certificate level qualification	23
DELTA or equivalent Diploma level qualification	20
Professional qualification - graduate	15
Professional qualification - post-graduate	79
Post-masters qualification	13
Non-professional qualification recorded - graduate	14
Post-graduate qualification recorded - not specified if professional	31
Other qualification or unknown response	13

Table 9 - Respondents' Highest level of TESOL Qualification (Question 3).

1 - 2 years	12	6%
2 - 5 years	29	14%
5 - 10 years	49	23%
More than 10 years	122	58%

Table 10 - Respondents' Teaching Experience (Question 5).

United Kingdom	44
United States	33
United Arab Emirates	20
Other Europe	13
Australia and New Zealand	12
Switzerland	10
Korea, South	9
Other Far East and India	9

China	8
Japan	7
Taiwan	7
Middle East and Africa	6
Central and South America	6
Canada	5
Spain	5

Table 11 - Respondents' current Teaching Location (Question 8).

Children/Young Learners	18
Teenagers	32
Young Adults	110
Adults	126
Others (includes Teachers Trainers	8

Table 12 – Age groups taught (Question 9).

State & Private Education - school	10
State & Community Education - post 16	13
State Education & Private - Higher Education (including EAP)	100
	10
Vocational Education	45
Private Teaching institute	6
Others	

Table 13 Teaching Environment (Question 10).

Number of groups taught	1	2	3	4	5	6	7	8	9	10	11	12	14	16	19	20
Number of respondents	21	36	37	32	19	12	9	5	2	6	1	2	1	1	1	4

Table 14 Number of groups taught (Question 11).

1 to 1 teaching	1
1 to 10 students	48
11 to 20 students	93
21 to 30 students	31
More than 30 students; please specify	17

Table 15 Average number of students in each group taught (Question 12).

Table 16 – Main language groups taught in order of number of students (Question 13).

In this table languages are categorised by origin; Portuguese is recorded under Other European Languages, although the student groups counted could have been Brazilians or students from Lusophone Africa. No respondents recorded teaching in Portugal, Brazil, Angola or Mozambique, which suggests the Portuguese speakers recorded were studying overseas. (Table follows on next page).

Table 16 – Main language groups taught in order of number of students (Question 13).

Languages recorded	Categorised as	Largest group	Second	Third	Fourth	Fifth	Sixth	Seventh	Eighth	Ninth	tenth
Albanian	Other European	1			1						
Amharic	African languages						2	1	1		1
Arabic	Arabic	23	15	5	5	7	3	3	1		1
Bahasa	Other Far Eastern								1		
Baluch	Middle East & Central Asia				1						
Bengali	South Asian Languages	1									
Bulgarian	Other European										1
Burmese	Other Far Eastern				1						
Cambodian	Other Far Eastern							1		2	
Catalan	Other European	1									
Chinese	Chinese	53	23	16	11	5	2	2			
Czech	Other European		3								
Dari	Middle East & Central Asia									1	1
Dutch	Other European	1	1								
Farsi	Middle East & Central Asia		2	2	2	1	1	1	1	2	
Finnish	Other European							1			

Language	Region										
Flemish	Other European										1
French	Other European	1	2	3	4	2		4	1	1	
German	Other European	5	2	4		2	2	1	2	1	
Greek	Other European			2	2	2					
Gujarati	South Asian Languages			1							
Hindi	South Asian Languages	2		2	2		1	1	1		
Indonesian	Other Far Eastern	1	2		2					1	
Italian	Other European	3		1	1	2	2		1	1	1
Japanese	Japanese	18	9	12	6	1	1	3	1		
Javanese	Other Far Eastern	1									
Kanjobol	South America		1								
Korean	Korean	14	19	9	3	3	2	1			1
Kurdish	Middle East & Central Asia										1
Lao	Other Far Eastern				1						
Malaysian	Other Far Eastern	1	2	1		2					
Mongolian	Other Far Eastern					1					
Polish	Other European	1	1	1		2	6		1		
Portuguese	Other European		1	3	1	2	1	2		1	3

Language	Category										
Punjabi	South Asian Languages		1								
Putonghua	South America		1								
Quiche	South America			1							
Russian	Other European		1	3	6	4	1	1			
Rwandan	African languages								1		
Serbo-Croatian/Macedonian	Other European			1							
Singhalese	South Asian Languages									1	
Slovakian	Other European					1		1	1		
Somali	African languages		1				2				
Spanish	Spanish	26	13	9	11	11	6	1	2	3	3
Swedish	Other European		1								
Tagalog	Other Far Eastern								1		
thai	Other Far Eastern	4	2	4	3	3	1	1		2	
Turkish	Other European	2	1	2	2		1		1		
Ukranian	Other European		1								
Urdu	South Asian Languagesn		1			1		1			
US Hmong	Other Far Eastern						1				

Students' use of Portable Electronic Dictionaries in the EFL/ESL Classroom; a Survey of Teacher Attitudes.
Appendix.

Uzbek	Middle East & Central Asia		1								
Valencian	Other European	1									
Vietnamese	Other Far Eastern	1	2	1	1		1	4	1	2	1

Students' use of Portable Electronic Dictionaries in the EFL/ESL Classroom; a Survey of Teacher Attitudes. Appendix.

Less than 10%	62	38%
11% to 25%	36	22%
26% to 50%	30	18%
51% to 75%	17	10%
76% to 100%	23	14%

Table 17 – Proportion of class members bringing PEDs to class (Question 17).

Monolingual	10	6%
Bilingual	125	75%
Don't know	35	21%

Table 18 – Use of bilingual and monolingual PEDs (Question 18).

Significantly	10	6%
Often	10	6%
Sometimes	44	28%
Slightly	52	32%
Not at all	47	29%

Table 19 – If your students bring Portable Electronic Dictionaries to class, how does this affect your teaching? (Question 20).

Yes - it's a problem.	17	10%
Yes	40	25%
It's not an issue	27	17%
Not really	62	38%
Definitely not	20	12%

Table 20 – Have you ever found students' use of Portable Electronic Dictionaries to be disruptive to your teaching? (Question 21).

Strongly Agree	12	7%
Agree	60	36%
I'm not sure	68	41%
Disagree	22	13%
Strongly Disagree	7	4%

Table 21 – Do you think students using Portable Electronic Dictionaries has a positive effect on their learning? (Question 22).

Question 27; You are invited to give any further comments you wish on Portable

Electronic Dictionaries and their use in the EFL/ESL classroom.

Due to space considerations, full data for this question can be downloaded as an

MS Excel spreadsheet from

http://www.bankgatetutors.co.uk/PED_survey_comments.xls .

Strongly encouraged	3	2%
Encouraged	54	33%
No opinion	44	27%
Discouraged	60	37%
Strongly discouraged	6	4%

Table 22 – Do you think that translation should be encouraged or discouraged in class? (Question 28).

Strongly Agree	11	7%
Agree	76	46%
Neutral	49	30%
Disagree	27	16%
Strongly Disagree	5	3%

Table 23 – Translating into L1 is a useful strategy for vocabulary development. (Question 29).

Strongly Agree	40	24%
Agree	73	44%
Neutral	30	18%
Disagree	26	16%

Table 24 – It is important to hear words to understand them (Question 30).

Strongly Agree	19	11%
Agree	93	56%
Neutral	41	25%
Disagree	14	8%
Strongly Disagree	3	2%

Table 25 – Bilingual definitions are helpful to vocabulary learning (Question 31).