

The Use of Portable Electronic Dictionaries in the Japanese EFL Classroom: Instructors' Opinions

Gary Bourke

Abstract

The market for small handheld devices performing a range of tasks has grown rapidly over the past two decades. Manufacturers of such electronic devices have introduced new forms of technology to aid us in ways we could never have imagined. The field of education has been no exception. Portable electronic dictionaries with a multitude of functions have become ubiquitous in English language classrooms. **Aim:** This article examines the opinions of EFL (English as a Foreign Language) instructors to find out whether they believe this new form of technology is being used in a way that will help students attain their goal of becoming better speakers of English. **Method:** To find out the opinions of EFL instructors, a survey containing twenty questions was conducted at three Japanese universities. **Result:** The results of this survey express a variety of views that reflect individual teaching styles, along with some common concerns. **Conclusion:** A more proactive approach to the use of portable electronic dictionaries by students and instructors is needed if there are to be any real benefits from this new technology.

Key Words: portable electronic dictionaries, English as a Foreign Language, university education, student learning strategies,

Introduction

Aiming to master a foreign language in the hope of following a chosen career is without doubt a very demanding endeavour for any student. It is the difficulty of this task that makes the approach all that more important. One role of the language instructor is to strive to make the language learning process as simple and as rewarding as possible. That is why giving guidance on how to study efficiently is as important as giving guidance on what to study.

This paper examines the use of portable electronic dictionaries (hereafter PEDs) in the EFL

classrooms of Japanese universities. It attempts to identify instructors' views on this relatively new form of technology and seeks to find out if they believe that PEDs are beneficial to language acquisition and if students are using this technology in a way that will help them acquire a higher level of proficiency.

Background

Every year, high school students apply to universities in the hope of being able to attend language courses taught by both native and non-native English speakers. Japanese universities

offer a wide range of courses that include the reinforcement of previously learnt grammar patterns, spoken communication, reading, writing, literature, translation, as well as other content-based and task-based specialty subjects.

In Japan, university is viewed as the place where students can discover their dreams and have ready access to the means to make those dreams come true. Gaining a place on an English undergraduate degree course is regarded as an opportunity for a student to be able to reach a level of English competency that will enable him or her to realize the dream of becoming a fluent speaker of English. Undoubtedly, universities do provide ample opportunity for motivated students to achieve their goals. Aside from core-credited courses, students have access to extra-curricular intensive courses, English conversation circles and study abroad programmes. However, it is the belief of attaining fluency that also attracts less motivated students whose forte is sometimes far removed from academic language study.

Contrary to how some students seem to approach the subject, foreign language proficiency cannot be gained through osmosis, and requires many years of commitment and hard work. Sewell's research into defining what makes a "good language learner" has identified a number of governing factors including; personality, learning style and learning strategy.

Student individual characteristics

Research to define which types of personality are best suited to language study has concluded that some individual characteristics are better than others. These include having high self-esteem (Heyde), being willing to take risks (Ruben in Willis 156), being inquisitive (Ellis and Sinclair in Willis 158), and a desire to integrate (Gardner in Lightbown and Spada 56) to name but a few. However, aside from the fact that the results from such research are often conflicting, there is little

language instructors can do when it comes to their students' individual personalities.

Learning style

Research in this field has identified a variety of study styles that have a direct correlation to achieving a high level of language proficiency. Brown identified ambiguity tolerance as being one such style. Though the results are again often conflicting, it is clear that various study styles are formed over a period of time and reflect the way an individual student copes with various learning situations. Study styles are similar to personal characteristics, in that they are shaped over a period of time and are the byproduct of the students' individual learning experiences. These styles can be deeply entrenched and very difficult to change. From the point of view of the university language instructor, who may have contact with any individual student for only one fifteen-week semester, these study styles are something instructors must work with and not really have any influence on.

Learning strategy

As present, there still is no unanimous agreement on the definition of study strategy. Ruben has described it as being "the techniques and devices, which a learner may use to acquire knowledge"(43). If this is the case, it is certainly an area of language acquisition that an instructor can influence in a short-term period. A single semester course provides ample opportunity for instructors to help students become more self-aware, realistic, and organized in their studies. This can be achieved through introducing different strategies and technologies, monitoring the progress of learners, and proving to the students that they are worthwhile. Introducing different strategies can motivate and reinvigorate students and help spur them nearer their goal of full-proficiency.

Study strategies acquired during the

previous six years of English education at junior high and high school can be difficult to modify. It is during these important formative years that non-native English teachers, employing techniques very similar to the Grammar Translation method,¹ instruct students in the use of English with the sole aim of helping them pass university entrance examinations. Fluency takes a backseat while rote memorization of grammar patterns and vocabulary occupy centre stage (Wolferen 110). Pages of vocabulary are memorized along with grammar patterns. New vocabulary is learnt along with its Japanese equivalent. English sentences are studied line for line along with a Japanese translation, leaving no opportunity for guesswork. Swan and Smith identified the “Japanese regard for authority in teacher-dominated lessons where much heed is paid to the ‘correct’ answer” (309). It is here, where speed and accuracy are valued over risk-taking, that PEDs prove their worth. Stirling described PEDs as providing a ‘security blanket’ for students. With little thought given to the correct spelling or pronunciation, a corresponding Japanese word can be found swiftly and tasks can be completed promptly. This raises the question: What does it mean, “to know a word”? Is just to be able to know the Japanese translation and not worry about its correct spelling or usage including collocation and pronunciation?

These small, lightweight devices have become ubiquitous in English language classrooms in Japan over the past decade. While some students may view them as an invaluable classroom aid, there is an ongoing debate as to whether such devices actually help students with language acquisition. Some language schools and instructors have banned such bilingual dictionaries from the classroom because they view them as distractions which offer the student the opportunity to disengage from what the teacher is saying and

invite the student to change back to their native language (Midlane 12). PEDs were originally marketed as “translators” and were aimed at individuals with very little or no understanding at all of the target foreign language. One particular advertisement went as far as to recommend such devices for people who “don’t want to learn the language” (JS&A Group, Inc.). They were seen as a quicker alternative to using a traditional phrasebook, but of little use to anyone hoping to master a foreign language other than as a means to review (Allen). Such comments appear to have been largely ignored. In Japan, students, parents, and grandparents of students seem to be willing to payout hundreds of dollars for a device that has never been proved as a benefit to language acquisition. It could be argued that PEDs make language classes easier and help the students’ short-term goals, but hinder the long-term goal of attaining fluency.

This study aims to gather the various opinions of university instructors in Japan with regard to this relatively new form of classroom technology, and to see whether they believe PEDs are being used in a manner that promotes a language-learning environment that helps students master English.

History and definition of the PED

The idea of automatic translation from one language to another using a mechanical device has been around for a very long time. In the modern era, computer technology developed during World War Two to decipher enemy codes was modified to try to translate languages in peacetime. The success of the widely reported first demonstration of a mechanical translation system called the Georgetown-IBM Experiment at IBM’s New York headquarters on 7th January

¹ A system employed throughout Europe in the 18th and 19th century for learning classical languages.

1954, involving the translation of sixty Russian sentences into English, led scientists to predict that full-bilingual mechanical translation using computerized devices was only a few years away (Garvin 46).

In 1979 the American Lexicon Corporation produced the LK3000, the world's first handheld language translator (Schneider). Soon after, a Japanese calculator manufacture, Craig Corporation, produced the M100. Although these two revolutionary devices were marketed as translation machines, they were never 'true' translators but dictionaries with the capability of stringing together a number of words (Allen).

After research and development into speech synthesis, Texas Instruments released *Speak & Spell* in 1978. This handheld electronic educational toy was the first of its type to utilize speech that was not recorded on magnetic tape. (*Speak & Spell (toy)*, Wikipedia). Between them, these three machines were the first recognizable forerunners of today's PED. Though they were developed and marketed for different end-users, they shared similar design qualities. All three were rectangular and contained a 16-character display under which was an alphabetical keyboard for data input. The functionality of these devices could be extended using interchangeable Read Only Memory (ROM) libraries called, 'capsules' or 'expansion modules.'

On 20th March 1980, Sharp Kabushiki Kaisha of Japan filed the first registered US patent for a portable electronic dictionary and language interpreter (US Patent 4438505). The term "portable electronic dictionary" helps set this particular device apart from other technologies. Electronic dictionaries come in a variety of forms and are inclusive of PEDs, personal digital assistants (PDA), smartphones with a dictionary program

function, programs that can be downloaded from the Internet, and purchased CD-ROMs or DVDs (*Electronic Dictionary*, Wikipedia). In Japanese, PEDs are simply referred to as *denshi jisho* (電子辞書), or electronic dictionary, while other media are given other names.

At present, the most widely used PEDs favored by Japanese university English language students are battery-powered handheld devices with a clamshell design. They incorporate a character display and qwerty² keyboard. Upper-range models may also include other features such as handwriting recognition, for handwritten data input³, audible pronunciation, calculator, and a "jump" or "skip-search" feature which allows the user to move between dictionaries and reverse translation. Due to advances made in flash memory technology, the memory capacity of these devices has been greatly improved in recent years. Today, many modern PEDs contain a variety of dictionaries, encyclopedias, travel phrase books, English test vocabulary preparation lists/quizzes, and some even include information on such diverse subjects as medicine and health supplements.

Methodology

To ascertain instructors' opinions on the way PEDs are being used by students in their classes, a survey consisting of twenty questions was prepared based on a similar study that was conducted by Vivian Midlane at Manchester University in 2005. This survey was carried out at three Japanese universities; Sagami Women's University, Tokai University and J.F. Oberlin University, over a period of 36 days between 23rd September and 28th October 2010. A total of fifty native and non-native instructors responded to this survey.

² A keyboard layout where the first row of letters begins with q, w, e, r, t and y.

³ A particularly useful function taking into account the orthographic implications of the Japanese logographic writing system.

Results and Commentary

Q1. What is your nationality?

English instructors from eight countries responded to this survey. Of these 34 (68%) were native and 16 (32 %) were non-native speakers of English. (*fig. 1.*)

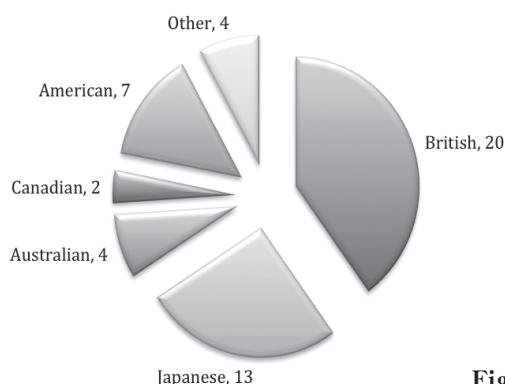


Fig. 1.

Q2. How long have you been teaching English?

The results of this question show that the respondents have a great deal of experience in the field of English teaching. The majority (72%) have taught English for over ten years, while just over half (54%) have taught for fifteen years or more. (*fig. 2.*)

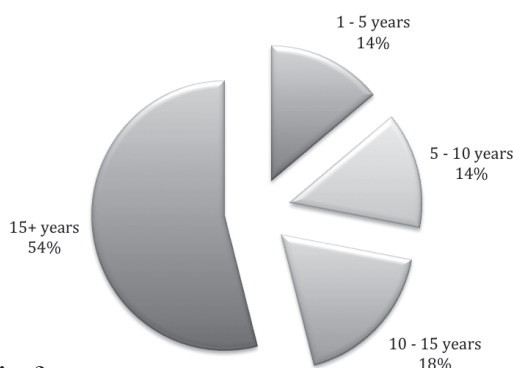


Fig. 2.

Q3. And Q4. How many different groups do you teach per week and what is the average number of students in each group?

At the time of this survey, the average instructor was teaching an average of 6.8 groups per

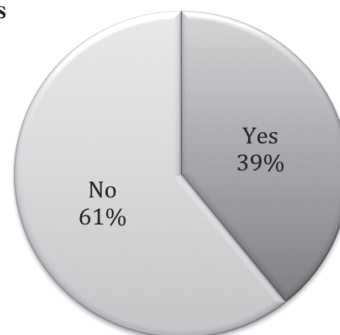
week with an average number of 22.2 students per group.

Q5. Do you own a portable electronic dictionary?

Exactly fifty percent of the respondents answered that they presently own a PED. When the data is divided into two groups (native/non-native instructor), it can be seen that 61% of native instructors do not own a PED, while 79% of non-native instructors do own one.

One reason for this could be that PEDs sold in Japan come with only Japanese keyboard markings, software and instruction manuals. If an instructor does not own, or have knowledge on the functions of PEDs, it is very unlikely he or she would design worksheets for, or involve, such devices in class activities. This is also mirrored in the results of Q8.1 to which just over a quarter (26%) responded that they do not know how their students use PEDs in the classroom. (*fig. 3.*)

Native Speakers



Non-native Speakers

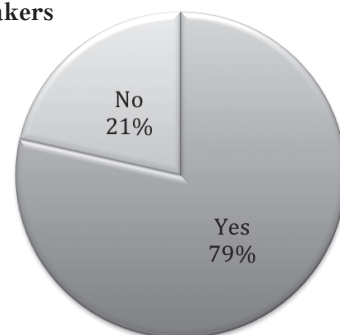


Fig. 3.

Q5.1. Which features does your PED include?

The results of this question show that the majority of surveyed instructors who do own a PED, own only a PED with basic lexical functions. As previously discussed, it is unlikely that instructors with no knowledge on the use of modern PEDs would design worksheets for or involve such devices in their class activities. (fig. 4.)

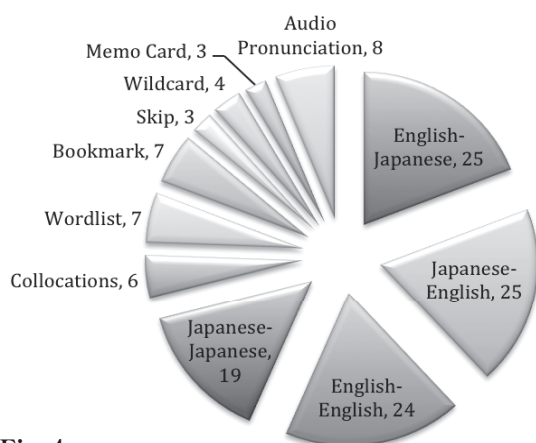


Fig. 4.

Q6. Do you require students to bring a dictionary to class?

The replies to this question were divided exactly in half. It could be suggested that this reflects different teaching styles being employed in the classroom. Some instructors prefer to use class time to gloss target vocabulary, while other instructors require their students to take control of their own language learning and look up any unknown vocabulary on their own. While there is a strong argument for encouraging young adult students to develop greater autonomy with regard to their language studies, students should also be made aware that an imbalance of learning opportunity could exist if they do not take full advantage of all available learning tools.

Q7. and Q 7.1. What percent of students bring a paper-based dictionary to class and of those students, which type of paper-based dictionary is most common?

Responses show that only about 5 % of students bring a paper-based dictionary to class. Of those 84% bring English-Japanese-English dictionaries and only 16% choose to bring a monolingual dictionary. (fig. 5.)

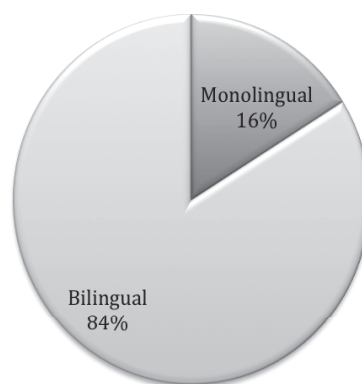


Fig. 5.

Q8. and Q8.1. What percent of students bring an electronic dictionary to class and of those students, which mode is most commonly used?

Results of this question clearly show that over three quarters of university students (82%) prefer to bring a PED to class.

Just over fifty percent of instructors responded that their students use mostly the Japanese-English-Japanese function on their PEDs. This give rise to the question, What information do students look up when they access their dictionaries? Also, does knowing the Japanese translation mean that you really “know” the word? Further research could look into how much attention is paid to other key elements including: pronunciation symbols, and collocations.

The percentage of students who use both monolingual and bilingual functions was very similar to the percentage of students who bring a monolingual paper-based dictionary. Just over a quarter of responding instructors answered that they did not know how their students used their dictionaries. This could lead to predicaments previously discussed (see Q5. and Q5.1). (fig. 6.)

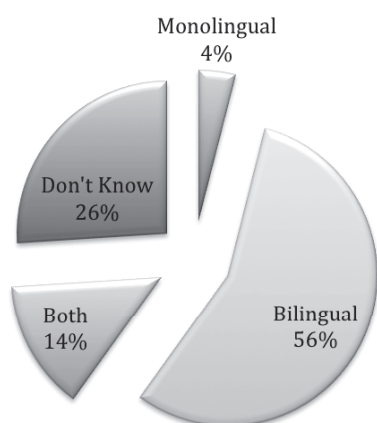


Fig. 6.

Q9. Do you believe there are any benefits to using an electronic dictionary over a conventional paper-based dictionary?

To this question 81 % agreed that there are clear benefits to using a PED. The obvious examples were speed, portability and audio pronunciation. These comments backup the results of an experiment carried out with groups of students at Kyoritsu Women's University in 2000, which found that students could look up words and their meanings 23% quicker using a PED compared to conventional paper-based dictionary (Weschler/Pitts, 2000).

It is worth mentioning that no instructors responded that functions such as wordlists and bookmarks could be useful for reviewing lessons. This could be again due to the fact that instructors are not familiar with the full range of functions that come with modern PEDs.

Q10. Do you ever prohibit the use of dictionaries during certain class activities?

Over three quarters of respondents (78%) said that they do prohibit the use of dictionaries during certain activities. Such activities include: tests, discussions, and timed reading and writing tasks.

This result indicates that instructors do believe that dictionaries have their limitations and can actually be a distraction during some

classroom activities, and that a majority of instructors believe that some students tend to overuse their dictionaries (see Q12.). (fig. 7.)

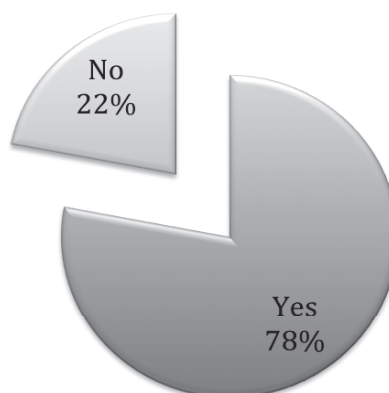


Fig. 7.

Q11. Do you feel that your students use their dictionaries effectively?

Just over fifty percent of surveyed instructors (53%) agreed that students do not get the maximum from their dictionaries. A number of instructors went on to add that this is due to students' lack of knowledge on how to use many of the functions that come with modern PEDs. This result, together with the result that 80 % of surveyed instructors have never carried out any activities designed to make use of electronic dictionaries (see Q.17), shows that there is a need for classroom instruction on the correct use of dictionaries. This could include; how to use IPA symbols and guidance on commonly used abbreviations.

These results seem to backup other research that has suggested that students do not use their dictionaries to help with grammatical problems, but mainly look up the meanings of verbs, nouns, and adjectives, with very little attention paid to prepositions, conjunctions, and articles (Cowie 181). (fig. 8.)

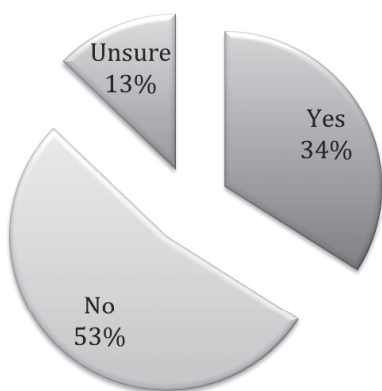


Fig. 8.

Q12. Do you agree that some students overuse their dictionaries?

To this questions 60% agreed that some students overuse dictionaries. This could be the reason that nearly 80 % of responding instructors restrict their use during certain class activities (see Q10).

Some instructors believe that students use dictionaries, especially PEDs, to withdraw from classroom activities and that excessive use of dictionaries in the classroom is a distraction, which prevents students from thinking in context (Midlane 12).

Having students put their dictionaries away may help them develop a habit of trying to guess the meaning of unknown vocabulary and focus more on the global meaning of written passages. As previously discussed, PEDs have proven quicker and easier to use compared to paper-based counterparts, however, it remains to be asked: Are PEDs quicker than guessing? Whatever the case, classroom time is the only opportunity some students get to actually use English, and unlike private study or review, dictionaries should really be a last resort for the majority of classroom based activities and not a start point. (fig. 9.)

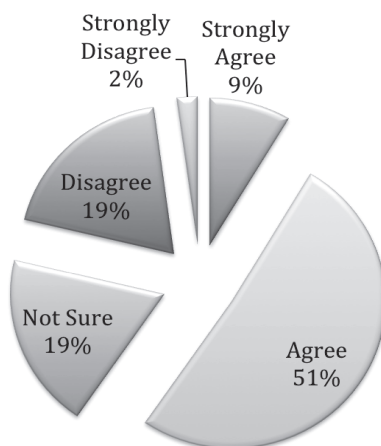


Fig. 9.

Q13. Do your students use audible pronunciation help functions in class?

Over three quarters of respondents (87%) reported that students use the audible pronunciation function of their PEDs to some degree during class. This is surprising as this is a function designed for use during private study and review sessions, not in a classroom where a professional speaker of English is on hand. (fig. 10.)

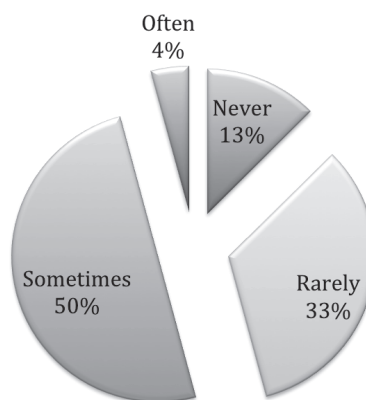


Fig. 10.

Q14. How does the use of PEDs affect your teaching?

The majority of respondents (56%) said that PEDs do not affect their teaching at all. However, it must be asked whether tasks would take longer and would more class time be required if students had access to only paper-based dictionaries? Also,

if no dictionaries were available, would instructors have to spend more classroom time previewing target language and making sure that it is understood?

These results demonstrate that PEDs have become so common in university classrooms that instructors overlook what kind of support students would require if they did not own a PED. (*fig. 11.*)

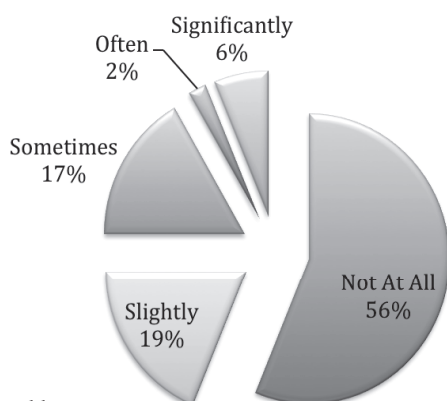


Fig. 11.

Q15. Does the use of electronic dictionaries ever disrupt your teaching?

Most respondents (79 %) answered that the use of PEDs in the classroom by students did not inconvenience them. On the contrary, as previously discussed, the speed at which individual students can look up words using a PED can help them follow what the instructor is saying and the task at hand without having to ask questions. (*fig. 12.*)

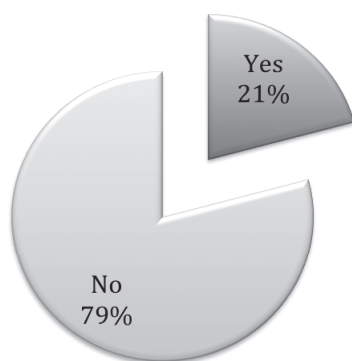


Fig. 12.

Q16. Do you agree electronic dictionaries have a positive effect on learning?

Over half of surveyed instructors (61%) agree that PEDs do have a positive effect on their students' attitude to learning English as a second language.

Again, the speed and convenience that PEDs offer over their paper-based rivals could be seen as one contributing factor along with the previously mentioned comment that some students see PEDs as providing a "safety blanket." This could be especially true in writing classes, where students do not have the option of reverting to their native language to help explain themselves, or complete set tasks. Other reasons may include the fact that some students seem to enjoy using new gizmos, and that ownership of an expensive PED could be seen as a status symbol. (*fig. 13.*)

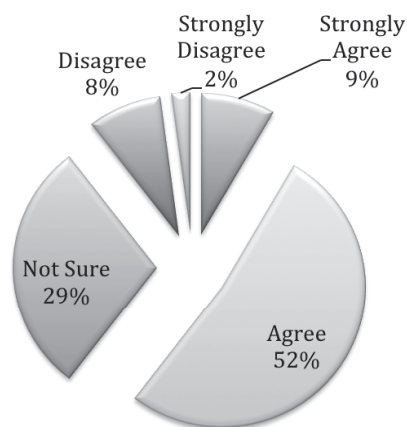


Fig. 13.

Q17. Have you ever carried out a class activity designed to make use of electronic dictionaries?

Results show that over three quarters of responding instructors (80%) have never carried out a class activity designed to make use of electronic dictionaries. This is surprisingly high when compared to the 53% of instructors who reported that they felt students do not use their dictionaries effectively (see Q11). Instructors are the only people who can remedy this situation. Worksheets and activities focused on vocabulary,

IPA symbols, abbreviations, and collocations would help students understand how to get more out of their PEDs.

An obstacle to this could be the fact that different dictionaries contain different content and different functions. The inclusion and non-inclusion of IPA symbols is a good example of this. With this in mind, instructors would be wasting time if they were to design activities that could only be carried out with certain makes of PED. Alternately, basic classroom instruction on how to use the monolingual function of PEDs and common abbreviations could result in more students concentrating more on how to look up and try and understand new vocabulary using the target language rather than simply reverting back to their native language. (fig. 14.)

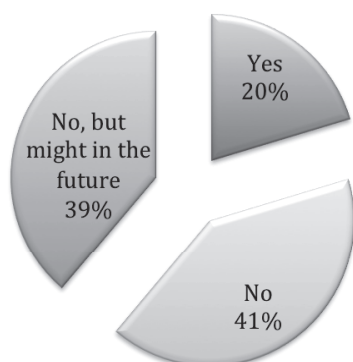


Fig. 14.

Q18. In class, which students are more likely to use electronic dictionaries?

These results show that instructors believe that all students, regardless of ability, are likely to invest in a PED to help with their English studies.

This area requires more research into how the individual student decides on which model to purchase. Do students consider their individual needs, and if so, what priority do they take over budget, sales campaigns, and comparing which models owned by friends? (fig. 15.)

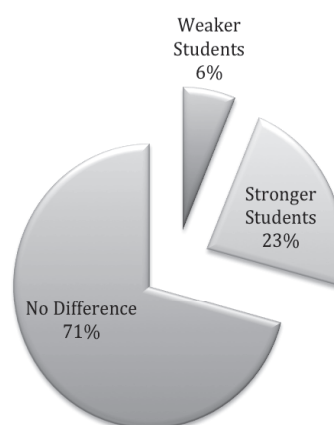


Fig. 15.

Q19. Do you agree that translation should be encouraged in class?

While the results show that 44% of instructors did express a preference for discouraging students from translating directly into Japanese, just over a quarter responded that they have no opinion. This leads to the question, is translation a bad thing? Modern language teacher-training courses give instruction on the aims and benefits of employing the Direct Method, a teaching method that refrains from using students' native languages, and recommends demonstration over translation when teaching new vocabulary. However, this system has been seen to work best with small highly motivated groups, and has severe limitations when trying to teach large groups of mixed ability students. (fig. 16.)

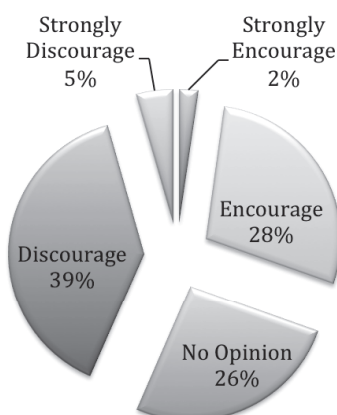


Fig. 16.

Q20. If you were designing an electronic dictionary with EFL students in mind, what features would you include?

In the early stages, new technology merely replicates what they are designed to replace. Mobile phones, for example, were just seen as a handy replacement for landline phones prior to the development of other functions including: cameras, e-mail, and web access. In the same way, early PEDs were just electronic versions of paper dictionaries and phrase books. However, in the future, better technology will allow PEDs to continue to be developed and provide a whole range of other functions. This question was asked in order to give an insight into how professional language instructors think that PEDs could be further developed to aid both student and instructor.

Instructors' suggestions included: the use of colour displays to help differentiate between word types and highlight parts of speech, pronunciation and collocations; word frequency lists (ex. Oxford English Dictionary's 3000 key words), wireless Internet access, cameras with scanner capabilities to enable data input, picture dictionaries, and more example sentences.

Conclusion

Learning a new language is a formidable task and language instructors play an important role trying to make it as simple and as rewarding as possible. High school students enter university with high expectations of being able to attain a level of English proficiency that will allow them to follow their chosen careers. Previous research into what makes a "good language learner" has identified a number of governing factors. One of these, study strategies, is an area that instructors can strongly influence and could be vital in helping the student attain their goal of full fluency.

The majority of university students use language study strategies that they acquired

during junior high and high school classes when the focus of their studies was to memorize vocabulary and grammar patterns in order to pass university entrance exams. University language courses are designed to build on what students already know and aim to take them further and attain full proficiency. With this change in study focus and to boost motivation it may be necessary for students to change and take a pluralistic stance in their approach to study strategies.

PEDs have become a common feature in English language classrooms. The modern PEDs can be traced back to early electronic phrasebooks developed and marketed at the end of the 1970s. Those early machines were developed for users with little or no intention to study a new language. However, later versions have been developed with the aim of helping the user come to grips with vocabulary through direct translation and have since become popular in a number of countries, especially in many east Asian countries where the educational cultural preference values speed and accuracy over guessing and risk taking.

A survey was jointly carried out at three Japanese universities with the aim of trying to identify how native and non-native language instructors view the way their students use PEDs in class. Fifty highly experienced instructors responded to this survey and their replies reflected the various approaches taken in individual classes. Opinions were divided on whether students should bring dictionaries and how they should be used. However, the majority of instructors believe that PEDs do offer some advantages over paper-based dictionaries and that some students do tend to overuse them, leading some instructors to prohibit their use during certain class activities. Only a minority of instructors believes their students use their PEDs efficiently, however, the majority of instructors have never carried out a classroom activity using PEDs. This could be in part due to instructors not being totally familiar

with all the functions available on modern PEDs. Alternately, it could be the result of the lack of standardization between PED manufacturers making it difficult for instructors to produce materials that can be used with any model of PED.

Japanese universities invest heavily in the latest facilities to attract the ever-shrinking number of high school graduates. Large sums of money are spent on equipping classrooms with the latest computers and audio/video equipment allowing instructors to employ various media in their classes. Individual instructors also personally invest their own money in the latest devices, including iPods and iPads in order to create a dynamic learning environment. However, it does seem unfortunate that, students and their families are spending vast sums of money on high-tech, state of the art dictionaries which are not being used to their full potential and are not being taken advantage of by students, instructors, or language programmes.

PEDs are certainly here to stay. Over the next decade they will develop into more robust learning tools. The important thing is for instructors to recognize them as just that – “tools” – making it easier to understand that there is potential for PEDs to be used and abused.

Students will not change their study strategies unless they realize their limitations or are introduced to more efficient methods. Instructors will need to take a more proactive approach to the use of portable electronic dictionaries and give guidance on how to use this technology if the present situation is to improve.

References

- Allen, B. *Tell it to the Machines*, Popular Mechanics, Google Books website. 1980. Web. 15 July 2010.
<http://books.google.com/books?id=ldkDAA AAMBAJ&pg=PA127&lpg=PA127&dq=Lexicon+LK3000&source=bl&ots=ItcA024tN2&sig=dMT7X-TL28mL3nQtGCFBZOnk5wY&hl=en&ei=pnYPTI7SLoiuQPtwYjhCw&sa=X&oi=book_result&ct=result&resnum=9&ved=0CCsQ6AEwCA#v=onepage&q&f=false>.
- Brown, H.D. *Principles of Language Learning and Teaching*. New York. Longman, 2000. Print.
- Cowie, A. *Focus on the Dictionary User*. Dictionaries for Foreign Learners: A History. London. OUP, 1997. pp. 175-198. Print.
- Electronic Dictionary*. Wikipedia. Wikimedia Foundation, Inc.. 2010. Web. 17 July 2010.
<http://en.wikipedia.org/wiki/Electronic_dictionary>.
- Gavin, P.L. *The Georgetown-IBM Experiment of 1954: An Evaluation in Respective*. 1967. Web. 10 July 2010.
<<http://www.mt-archive.info/Garvin-1967.pdf>>.
- Heyde, A. M. *The Relationship between Self-esteem and Listening Comprehension of EFL Students*. Biblioteca Virtual website. 1979. Web. 15 July 2010.
<http://bibliotecavirtualut.suagm.edu/.../The_Relationship_between_Self-esteem.pdf>.
- JS & A Group, Inc.. *Language Translator*. Popular Science Magazine. Jan. 1979. p14. Los Angeles, 1979. Web. 15 July 2010.
<http://books.google.com/books?id=kQEAAA AAMBAJ&pg=PA15&lpg=PA15&dq=%22craig+corporation%22+japan&source=bl&ots=t7ivCFDNzr&sig=WrvO1qVrQ9jqzKNWu1Y2bAFKP0Y&hl=en&ei=Jn6PTJewDJTSuwPfzMTQCw&sa=X&oi=book_result&ct=result&resnum=1&ved=0CBIQ6AEwAA#v=onepage&q=%22c&f=false>.
- Lightbown, P.M. and Spada, N. *How Languages are Learnt*. Oxford. OUP, 1999. Print.
- Midlane, V. *Student's use of Portable Electronic Dictionaries in the EFL/ESL Classroom*. University of Manchester. 2005. Web. 25 June 2010.

<<http://www.bankgatatutors.co.uk/PEDs.htm>>.

Ruben, J. *What a 'good language learner' can teach us*. TESOL Quarterly 9. 41-51. 1975 Print.

Schneider, H. *Hermann's Computer Museum*. 2007. Web. 15 July 2010.

<http://www.lschneider.de/hecomu/hecomu_2_2_11.php>.

Sewell, H. D. *The Good Language Learner*. University of Birmingham, 2009. Center of English Language Studies website. Web. 28 June 2010. <http://www.cels.bham.ac.uk/resources/essays/Sewell_SLA.pdf>.

Speak & Spell (toy). Wikipedia. Wikimedia Foundation, Inc.. 2010. Web. 20 July 2010. <http://en.wikipedia.org/wiki/Speak_%26_Spell_%28toy%29>.

Stirling, J. *The Portable Electronic Dictionary: Faithful Friend of faceless Foe?*. The English Language Garden website. 2003. Bell Norwich. Web. 17 July 2010.

<http://www.bellstudents.com/norwich/project10/portable_electronic_dictionaries.htm>.

Swan, M. & Smith, B. (1997) *Learner English: A teacher's Guide to Interference and Other Problems*. Cambridge. Cambridge University Press, 1997. Print.

Weschler, R., Pitts, C. (2000) *An Experiment Using Electronic Dictionaries with EFL Students (TESL/TEFL)*. The Internet TESL Journal. Vol. VI. No.8. 2000. Web. 15 July 2010.

<<http://iteslj.org/Articles/Weschler-ElectroDict.html>>.

Willis, D. *Second Language Acquisition*. Birmingham: University of Birmingham, 2001. Print.

Wolferen, K. V. *The Enigma of Japanese Power*. Tokyo. Tuttle Books, 1996. Print.

