Integrating ICTs into a University Language Curriculum: Can it be done successfully?

語学教育におけるICTの導入について
（ICT＝情報とコミュニケーション技術）

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Abstract

This paper describes what actions need to be taken to successfully integrate ICTs (Information and Communications Technologies) into University language curriculums. The introduction of ICTs into educational institutions is occurring throughout Europe, North America, and Japan, as well as other countries. There are numerous reasons given for this investment; improvements in education is just one of a number of possible justifications. Whatever the justification, economic discretion and common sense require that a ‘cost-benefit’ analysis of the proposed technology be carried out. Thus, in describing how to successfully integrate ICTs, this paper explains how to maximize the ‘benefits’ and minimize the ‘costs’ of introducing ICTs into a university. The initial financial outlay to purchase and install ICTs are just some of the costs associated with ICTs. This paper concentrates not only on these initial costs, but also on the costs that can be incurred once ICTs have been purchased. It will be shown that incorporating the use of computers into a language teaching program can have positive educational outcomes, and thus the question posed in the title can be answered in the affirmative. However, this success is dependent upon a number of factors, the absence of any one of which may lead to the costs outweighing the benefits. For these necessary factors to exist, fundamental structural and attitudinal changes on the part of the stakeholders need to occur.

1. Introduction

Technology has often been touted as the solution to the many problems that educational
institutions face. Since the 1980’s computers have been advocated as a panacea to the problems endemic in education. This belief in the power of technology has led to governments and schools investing vast amounts of money in the expectation that standards of education would somehow improve. However, at the beginning of the twenty first century there are dissenting voices suggesting that at worst technology has nothing to offer education (see Berry and Oppenheimer), or at best it may have some benefits but teachers are not yet effectively using the technology at their disposal (see Cuban and the EC Directorate report).

There are successful instances of integration but they appear to be either dependent on unsustainable factors, or are sustainable in a specific institution but cannot be replicated in other places. Given that success is not a forgone conclusion it behooves any institution contemplating investing in ICTs to clearly consider the potential costs and benefits. Furthermore, it is vital that any institution that has already made the investment in ICTs should attempt to maximize the benefits and minimize the cost of maintaining the technology and its attendant infrastructure.

This is a complex issue, and thus this paper discusses the topic mainly as it relates to foreign language courses in Japanese Universities. Having said this, it is hoped that much of what is described and suggested will be applicable to situations in other institutions regardless of subject area.

In order to answer the question set out in the title the key terms will be defined, namely: ‘ICTs’, ‘Integration’, a ‘University language Curriculum’, and ‘Success’. Following on from this, this discussion will be put in context with a brief description of the history of computers in language education. It will be seen that the concept of Computer Assisted Language Learning (CALL) has existed since the early 1960s, but it was only with the arrival of the microcomputer that CALL became a practical possibility for the majority of teachers. In the fourth part, a description of the potential problems and costs associated with technology will be made. The financial costs of integration and maintenance are just part of the equation. Potentially, far more ‘costly’ are the burdens that are placed on the stakeholders, in particular the teachers and students. Problems can arise from three main areas; technological issues, structural contexts and teaching contexts.

To counter the discussion of costs, the fifth section will analyze the potential benefits and advantages of using computers in language teaching. With the arrival of the Internet, and mobile forms of communication technology there are great possibilities. For example, it is now technologically possible for a language student to interact with an online environment that is packed with multimedia resources that give her a learning experience impossible to be had in a traditional language classroom. What is more, this ‘experience’ can be had at a time and place of her choosing. Once the ‘costs and benefits’ have been explained, the sixth section will describe how to diminish the costs and maximize the benefits of introducing technology into a university
language curriculum. Here solutions to the various problems mentioned in section four will be described. What is more, suggestions will be made as to how to elicit and capitalize on the advantages inherent within computer technology. This final section is completed with an introduction to the concept of ‘Deep Integration’, which is a description of how ICTs can be successfully integrated into a language course. Technology is becoming ever more ubiquitous in universities. However, this technology will only have a positive impact on educational outcomes if it becomes central to the functioning of a university, but at the same time unobtrusive, compliant and flexible.

2. Definitions

2.1 ICTs

ICTs (Information and Communications Technologies) refers to electronic devices that are used to process and communicate information. The ‘processing devices’ are hardware such as video cameras, computers and their peripherals. The ‘communication devices’ are the means by which information can be disseminated; this includes traditional means of broadcasting, the Internet, and computer software that is used to package the information into a presentable form. Kennelwell notes that until recently this field was just known as Information Technology (IT). “There is no real difference in the meaning. The C for Communications has been added to emphasize the dramatic rise in significance of networked services.” (Kennelwell, Introduction). ICT also refers to a subject area, just as mathematics and geography are subjects to be studied. Thus in schools in Britain children now have ICT classes in which they learn how to efficiently and effectively use ICTs. Although this paper discusses the integration of computers, it is now not possible to clearly separate computers from other technologies. Whilst it still plays a central role, the computer has become just one of many technologies that can be used to enhance teaching. Reflecting this, many people now use the term TELL (Technology Enhanced Language Learning) as opposed to CALL. However, in order to keep things focused the author will concentrate on computers and the field of CALL, which will be explained in section three.

2.2 Integration

The ‘integration’ of ICTs into a university language curriculum has three stages; acquisition, introduction and maintenance. The acquisition of ICTs, in other words the purchase of hardware and the means for information to be disseminated, is a critical stage in the process of integration since it will define and limit what teachers will be able to do with technology in their teaching. Management or teachers or a combination of both may initiate this stage. The second stage of integration, the introduction of ICTs, is composed of three elements. First, the introduction of ICTs involves deciding where and how to locate the hardware and software. For example, in dedicated computer rooms or in regular classrooms. The second element entails a comprehensive description of the role that the technology is expected to play in language
teaching. Ideally, this description will be part of the language curriculum, and will include details of how the technology is to be incorporated into language lessons. The third element in this stage also includes the process of acquainting the stakeholders with the technology so that they can use it efficiently and effectively. The final stage of integration is that of maintenance, of which there are two parts. There is the need to insure that the technology remains up and running, which is the role of an IT department. The second aspect of maintenance is ensuring that the technology is being used to achieve the goals laid down in the language curriculum.

2.3 University Language Curriculum

As has been stated above, this paper looks primarily at how ICTs can be integrated into a University Language Curriculum. The nature of this curriculum has a crucial influence on whether or not the use of ICTs in language teaching has a beneficial effect. A language curriculum can just simply refer to a list of all the language courses offered by an educational institution. Ideally, a curriculum should be a detailed description of the educational goals of individual courses, and how these goals will contribute to achieving the overarching goals of the institution. As well as this, a curriculum should include syllabi that specify how classes will be taught and how students’ performance will be evaluated to ascertain whether or not goals have been met. In the context of integrating ICTs, the curriculum should also make clear how technology will assist in achieving these goals.

2.4 ‘Successful’ Integration

The title asks whether or not the integration of ICTs can be done ‘successfully’. Success in this area can be measured in a number of ways. Whether or not language skills improve is one measure of success, but may be an invalid or incomplete measure given that the initial incentive to introduce computers into a university will probably not be to enhance language teaching, or even to improve instruction in other subject areas. More likely, the initial desire to acquire technology will be borne of a need to ‘add value’ to the university in order to make it a more attractive prospect to potential ‘customers’. Often, the original motivation, perhaps part of the ‘added value’ justification, will be vocational in nature; a desire to have students acquire the IT skills that they’ll need in a future work place. Language Labs, and their successor the CALL Lab, are one of the few technologies that have been purchased with the stated goal of improving language skills. Although, a shiny new CALL lab may also be perceived as having great PR value.

Given that the reasons for introducing technology into a university are numerous, and that the goal of improving language skills may not have even been an objective, it is of course not legitimate to assess the success of ICTs solely in terms improvements in language skills. This said, once an overt decision is made to use the already available ICT resources for language teaching it is fair to assess whether or not the benefits of utilizing these resources outweigh the costs. There are four measurements that can be made when assessing the benefits of ICTs when
used in a language teaching context. First, there is the extent to which teachers and students accept and use the technology and make it part of their daily routine. Secondly, the degree to which the teaching and learning experience becomes more varied and so enjoyable is also an important measure of success. A third means of assessing the success of ICTs is whether or not they contribute to making the teaching and learning process more efficient.

The fourth measure of success is a determination of whether or not ICTs have actually improved students’ life chances. Life chances can be improved by enhancing and increasing the educational experiences available to students. They can also be improved by increasing students’ knowledge base, in this case language skills. Enhancing and increasing the educational experiences available to students is similar to the second measurement, but rather than simply assessing whether or not the experience has been ‘enjoyable’, it involves measuring whether or not this enjoyment is transformed into tangible benefits, such as improved job hunting prospects. In the realm of ICTs, the opportunity to learn how to use computers and the enjoyment that can be experienced from communicating with people on the other side of the world via CMC (Computer Mediated Communication) technologies, are valuable experiences that may improve their life chances.

Gauging whether or not students’ language abilities have improved due to the incorporation of ICTs in their training is a two pronged issue. Simply comparing before-and-after statistics is a relatively easy method, however it may not be convincing to those who are dubious about whether or not the extra expenditure in terms of money and time needed to learn how to use ICTs is worth it. These people need to know that ICTs can not only improve students’ educational outcomes, but also that they can improve them above and beyond any other means. When one bears in mind the cost of ICTs one realises that demonstrating success by these standards is problematic. It could be argued that an improvement of ‘plus 5’ achieved with ‘expensive’ ICTs is too costly when compared to an improvement of just ‘plus 4’ achieved by a ‘cheaper’ means. There is also the practical problem of comparison. Finding a control group that has not experienced the reputed benefits of ICTs but is similar in all other factors with a group that has been taught with ICTs may not be possible.

Simply put, successful integration can be said to have been achieved when the benefits outweigh the costs. Although, it should be pointed out that this is never a final equation, since the costs of keeping ICTs running never completely disappear. That is to say that there are regular maintenance and upkeep costs associated with technology, as well as the costs of training teachers and students how to use the technology. In this section it has been suggested that there are four methods of measuring success. Each measure leads on from, and is more exacting than the previous one. Although important, it is not possible here to delineate the exact methods of measurement. The purpose of this section is to highlight different measurements and to make
those concerned aware that it is imperative to at least consider how ICTs enhance language teaching. The four measurements can be summarized with the following questions:

1. How much are students and teachers using the ICTs?
2. Do the ICTs increase the variety and enjoyment in language learning and teaching?
3. Do the ICTs increase the efficiency of language learning and teaching?
4. Do the ICTs increase students’ life chances?
   a. Do the ICTs enhance their future (job) prospects?
   b. Do the ICTs improve their language skills?


   The advent of any new technology is always accompanied by its supporters who tend to make claims for the technology that far exceed its actual benefit to society. The linking up of cities and countries in the nineteenth century by the telegraph did indeed have a great effect on societies, arguably more so than the Internet. In the ‘Victorian Internet’, Standage reports some of the grander claims that were made in support of the telegraph once a transatlantic connection was made in 1858. “What can be more likely to effect peace than a constant and complete intercourse between all nations and individuals in the world?” (Edward Thornton, the British ambassador to the United States, quoted in Standage, p. 90). He goes on to quote another supporter who wrote, “the telegraph wire, the nerve of international life, transmitting knowledge of events, removing causes of misunderstanding, and promoting peace and harmony throughout the world” (Standage, p. 91).

   In the twentieth century there was a succession of machines that were vaunted as being tools that could change education. Todd Oppenheimer wrote about these great expectations:

   In 1922 Thomas Edison predicted that “the motion picture is destined to revolutionize our educational system and . . . in a few years it will supplant largely, if not entirely, the use of textbooks.” Twenty-three years later, in 1945, William Levenson, the director of the Cleveland public schools’ radio station, claimed that “the time may come when a portable radio receiver will be as common in the classroom as is the blackboard.” Forty years after that the noted psychologist B. F. Skinner, referring to the first days of his “teaching machines,” in the late 1950s and early 1960s, wrote, “I was soon saying that, with the help of teaching machines and programmed instruction, students could learn twice as much in the same time and with the same effort as in a standard classroom.” Ten years after Skinner’s recollections were published, President Bill Clinton campaigned for “a bridge to the twenty-first century where computers are as much a part of the classroom as blackboards.” (Oppenheimer, p. 1)
Thus the computer is not the first piece of technology to have its advantages somewhat overstated. The difference between the computer and its predecessors is that improvements in computer hardware and software have been exponential. Thus, whenever a new generation of computers comes to market, there is a new generation of advocates for computers in education. CAI (Computer Assisted Instruction) and then CALL have existed since the early 1960’s (Levy, chapter 2). Initially, it was within the reach of only the wealthiest institutions, and most certainly on the margins of language teaching. In the 1980s and 1990s there were five technological innovations that helped to ‘democratize’ computing and make it technically possible for any language teacher to make the computer a significant part of their teaching repertoire. These five developments are, the advent of the microcomputer, the production of multimedia capable computers, the popularization of the Internet, the creation of authoring software, and finally the availability of high quality ‘open source’ computer programs.

The advent of the microcomputer in the 1980’s made it financially feasible for ‘ordinary’ language teachers to use computers in their teaching (see Higgins & Johns). However, using computers in teaching still required a high level of technical skill, and so was only really within the grasp of ‘teacher-programmers’; teachers that also had training in computer programming. For example, the last third of Higgins’ book is dedicated to designing and coding programs to be used in language teaching. As more commercial language programs became available, computer advocates believed that computers would bring about radical changes. In 1987 Hainline wrote:

“The computer as a language-teaching assistant promises much. In its first twenty years it has not fulfilled its promise. But the next twenty should see advances that will more than compensate for the somewhat slow start” (Hainline, p. 1).

Also in 1987, Hertz wrote;

“A revolution is taking place in our schools, fascinating some teachers with its potential and terrifying others with a future that arrived too soon.” And, “If the schools are to fulfill the goal of providing every child with at least an adequate education, then we must see a breakthrough in methodology. Computer-assisted instruction is the arrival of education’s Industrial Revolution” (Hertz, pp. 1 & 2).

Perhaps both Hainline and Hertz were aware of the advances being made in increasing computer power. The production of multimedia computers and the popularization of the Internet made their claims seem more plausible. Indeed, Cuban writes that certain influential sectors of American society believed in the claims made by computer advocates. This leads to the increased expenditure on computers alluded to by Oppenheimer in the above quote. One of the advocates at that time was Louis Gerstner the CEO of IBM, who in a speech said:

“Before we can get the education revolution rolling, we need to recognize that our public schools are low-tech institutions in a high-tech society. The same changes that have bought about cataclysmic change to every facet of business can improve the way
we teach students and teachers. And it can also improve the efficiency and effectiveness of how we run our schools.” (Louis Gerstner, Jr, IBM’s CEO, 1995. Quoted in Cuban, p. 13)

The proliferation of computers in schools and universities was breaking the ‘digital divide’. A further development that made it possible for institutions and teachers to be more adventurous in their use of computers was the creation of authoring software. Without this kind of software people had to rely on commercially available language learning software, or have been able to program the software themselves. Authoring software allows an individual teacher to create complex language learning tasks including sound and pictures without having to write a single line of code. In conjunction with the Internet, the same teacher can deliver these tasks to students at an extremely low cost. Perhaps one of the best examples of authoring software used by teachers is a free program called ‘Hot Potatoes’, which can be downloaded at http://web.uvic.ca/hrd/halfbaked/. Examples of language learning tasks made with Hot Potatoes can be seen on the author’s web site.

The fifth important development that has helped to democratize computing power is the availability of open source software. Open source software is both free and non-proprietary. This means that the source code of the software can be accessed by anyone who would like to add to or alter the software. The existence of open source software has important implications for language teachers since it makes potentially very powerful pieces of software far more obtainable, adaptable and usable. It makes possible the cooperative development and adjustment of an already existing program by a group of language teachers. Although, it has to be admitted that the presence of a ‘teacher-programmer’ will make even ‘simple’ adjustments that much easier. Linux system software is perhaps the best-known example of open source software. For the language teaching profession there are now two highly acclaimed open source programs; Xoops (http://www.xoops.org) and Moodle (http://moodle.org). Although neither of these programs were created specifically for language teaching they are now being used by language teachers. The Xoops package allows the teacher to create an online learning environment. Moodle is categorized as a Lesson Management System (LMS) or Virtual learning Environment (VLE) that has similar features to some commercial products such as WebCT (http://www.webct.com/) and Blackboard (http://www.blackboard.com/).

At the beginning of the 21st century there is therefore the technological potential for universities to incorporate highly sophisticated computer systems into their language learning courses. Meskill describes how computers could play a central role in language teaching;

“The year is 2005. It’s 2:45 p.m. A high school ESL class is winding down, . . . Thong disconnects his 8 1/2 in. notebook computer from the plug on his desk. During the class Thong has transferred image and sound files of all class activities to his notebook computer . . . his private tutor (a video image) greets him and asks how he
liked today’s class, what he learned, what understandings he gained and what kinds of questions still remain in his mind . . . as a previewing strategy he tests his retention of new vocabulary, structures, and language functions in a dialogue with his own on-line tutor . . . such technological power is clearly just around the corner” (Meskill in Egbert et al, p. 459).

University teachers in Japan now have access to computing power far in excess of that available to the advocates of the 1980’s. What is more, they have the ability to deliver language tasks over the Internet and high-speed networks. Yet, despite these technological advances, Larry Cuban concludes that computers have been oversold and underused. In his study of educational institutions in and around the Silicon Valley area of Northern California he does cite examples of excellent use, however these instances are not the norm. He writes;

“Teachers have been infrequent and limited users of the new technologies for classroom instruction. . . . “e-learning” in public schools has turned out to be word processing and Internet searches. As important supplements as these have become to many teachers’ repertoires, they are far from the project-based teaching and learning that some techno-promoters have sought” (Cuban, p. 178). He continues, “When it comes to higher teacher and student productivity and a transformation in teaching and learning, however, there is little ambiguity. Both must be tagged as failures. Computers have been oversold and underused, at least for now” (Cuban, p. 179).

Cuban is not alone in his pessimistic assessment of the state of computers in education. In a report commissioned by the EC Directorate general of Education and Culture, a number of academics involved in ICTs in education write about what they found in educational institutions around Europe;

“Based on our consultations with experts and reports from participants in European Centre for Modern Languages workshops and elsewhere, it is clear that the use of ICT in FL teaching and learning has by no means reached a satisfactory stage of penetration in any of the chief educational sectors” (EC Directorate report p. 70).

Despite the fact that the use of computers in language teaching has not lived up to its expectations, many teachers continue to express a desire to use computers in their language teaching. In a survey carried out by the author from July to December 2002, 95% of respondents (n=334), indicated that they intended to continue or start using computers in their teaching. A further 76% of respondents claimed to be actively using computers in their language teaching. And of these teachers, 53% claimed that the computer related activities they have their students do are successful (5, 6, or 7 on a 7 point likert scale). However, when asked whether or not they thought that computers had been well integrated into their institutions language teaching curriculum, only 17% answered ‘yes probably, and 9% ‘yes, definitely’. The detailed results of the survey and the survey itself can be seen on the author’s web site.
This gap between teachers’ desire to use computers in language teaching, and the reality of the limited number of teachers and institutions that actively and regularly use computers in their language courses leads the author to argue that there is an ICT-Gulf. This gulf separates the few that successfully practice CALL and the majority of language teachers that would like to use computers in their teaching but for various reasons are unable to do so. In other words, many teachers perceive the benefits of using computers but because of the ‘costs’ they can or do not use computers in their teaching. If computers are to be successfully used in teaching it is imperative that these ‘costs’ are identified and then reduced or removed. The next section will identify the problems that teachers and intuitions face in trying to introduce computers. Solutions to these problems are covered in section six.

4. Potential Problems and Costs associated with integrating and maintaining ICTs

The pessimistic picture that has so far been painted of computers in language teaching may lead some readers to conclude that CALL is a lost cause. However, this author believes that the lack of overall success can be attributed to a failure on the part of those involved with implementing CALL systems to fully comprehend the problems that are associated with attempts to incorporate ICTs into language programs. In the past, too often these problems have not been addressed and as a result the costs of integration have outweighed the benefits. This author has described at length the factors that lead to the creation of the ICT-Gulf in another paper (Ruthven-Stuart, 2003). The problems are essentially found in three areas; technological issues, structural issues, and teaching issues. Furthermore, the problems can arise in each of the three stages of integration; acquisition, introduction and maintenance.

4.1 Technological issues

It was mentioned in section 2.2 that the type of ICTs that are acquired will define and limit what teachers are able to do with the technology in their teaching. For example, the specifications and capabilities of computers have a direct effect on what teachers can and cannot do. A computer without Chinese fonts cannot be used to teach Chinese. A network with limited capacity cannot be easily used to deliver sound or movie files. Once the ICTs are in place, technological problems will occur in both the introduction and maintenance stages. If not enough thought and preparation has been put into the acquisition stage, the IT department may find that there are problems of compatibility between old and new systems. During the maintenance stage there will always be problems connected with the reliability of both hardware and software. These maintenance problems could significantly add to the Total Cost of Ownership (TCO), which is an important concern when deciding which program or system to acquire. Perhaps one of the biggest and most overlooked technological issues is that of “FIT-ness”: Fluency with Information Technology. Fass McEuen used this term in the context of a study of students at Southwestern University. “To say that our students, having grown up with digital media in their homes and
Of course it is not only students who lack “FIT-ness”. An unavoidable fact is that the successful practice of CALL will depend to a considerable extent on the technical knowledge of teachers and the IT people they can go to for help. The predicament facing teachers is that it is not clear just how much technical knowledge is needed in order to effectively practice CALL. A further technological problem that teachers face in the acquisition stage is choosing ‘software’; the language material that students study. Healy (1999) remarked that, “. . . approximately 90 percent of current “educational” software is not worth buying. Currently, most is programmed by techies . . . ” (ibid, p. 34). Since this was written, the quality and variety of language software has improved, but its cost and complexity continues to impede teachers contemplating adopting CALL.

4.2 Structural issues

The second problem area is the structure of universities. Again this is an issue that rears its head in all three stages of integration. If it is the intention that ICTs will be used by all students on a language program, the successful integration of ICTs into a language course requires a cohesive and centralized decision making process. Barone points out that, “IT culture is attuned to the integrated functioning of the whole organization” (Barone, 2001, p. 15). In contrast, she continues, “Faculty culture is highly balkanized.” (ibid; p. 15). In practice this means that decisions that are made at each stage of integration may not take into account the needs of all stakeholders. Even if a teacher does not expect her colleagues to adopt CALL, she needs their cooperation and support just to get an ICT project up and running. This is not only because of the expense involved, but also because the introduction of ICTs invariably impinges upon schedules and curricula matters that concern all the teaching staff in a university.

4.3 Teaching issues

The third problem area concerns the context of teaching, and in particular, the role of teachers. Failure to consult all the language teachers in the acquisition stage will result in the technology being underused or not used at all. Even if the primary purpose of acquisition is PR in nature, the PR value is only short term, and indeed will be undermined if the technology is underused. It is in the introduction and maintenance stages that problems will arise if their has been a failure to consult stakeholders in the first stage. For example, if there has been no analysis and discussion of how the ICTs will fit into and be incorporated into the education of students, the technology may well be viewed as irrelevant, or even an impediment, to the goals of the course by both teachers and students. A failure to consult, will become particularly apparent in the maintenance stage as it becomes clear that no consideration has been paid to how teachers do their jobs. Although CALL is not a teaching ‘method’ in itself, its successful adoption does require
teachers to make changes to their pedagogy, and to accept that the nature of control over their classes will change. Although Chapelle (2000) argues that the idea of CALL as a ‘method’ is a myth (ibid, p.211), she does note that: “... when teachers do not have the values and skills that are consistent with Network Based Language Teaching (NBLT) activities, the types of changes introduced into NBLT can be “unsettling,” in part because teachers’ control is compromised ...” (Chapelle, 2000, p.221).

Although Chappelle was referring to a particular type of CALL, the implication of her statement is that the traditional teacher centered class is not conducive to the successful practice of CALL. Healy maintains that the changes implied in the successful practice of CALL do amount to a change in method. “Using technology’s power often requires radical shifts in a teacher’s methods and philosophy. Even highly motivated teachers with access to state-of-the-art equipment take approximately five or six years to change old habits to make full use of machines” (Healy, 1999, p.87). From another perspective, a failure to consider how teachers teach can result in the construction of computer rooms that are completely inappropriate given the teaching style of most language teachers. A related problem is that a large number of computers in a limited number of rooms will not be conducive to language teaching for logistical reasons. Either only one class will be able to use the computer room every week, or every class will be able to use it, but only infrequently.

A further problem related to teaching contexts has been mentioned above in section 2.3, the language curriculum. One way of comparing and describing curriculums is their level of ‘cohesiveness’. A cohesive curriculum is one in which the class content, methods of teaching, and means of assessment of individual courses all coalesce to achieve the overarching goals of the language courses. The extent to which a curriculum is cohesive will have a great effect on the success or otherwise of ICTs. It is argued that ICTs will not be successfully integrated into a university that does not have a cohesive language curriculum. In such a situation, individual teachers may successfully use ICTs, but a comprehensive integration of ICTs will not be possible.

5. The Benefits: Potential advantages to integrating and maintaining ICTs

It is not possible in this paper to list all the benefits that can be accrued from using computers in language teaching. The reader may like to read the article on the United States Ministry of Education’s web site that expounds the benefits of using technology in education. In the context of a university language program computers have the ‘potential’ to radically improve language education. Some of the benefits of computers are:

- They add variety to the learning experience
- They allow and encourage autonomous learning
- They allow students to practice on their own and in their own time
They are a means of raising awareness of the structure of language, e.g. through concordancing.

They are a provider of mechanical language practice.

They are a useful (language) production tool, e.g. word processors, presentation software and HTML editors (= web page making software).

They are an aid to communication, e.g. email, chat and BB systems.

They can be motivating and enjoyable to use.

They can complement classroom instruction.

They can link the students to outside the classroom.

They can manage learning tasks, for example via an LMS.

They can provide a database of visual and textual materials.

They can provide more authentic language learning experiences.

They can supply students with individually tailored tasks.

And so on.

Meskill’s account of how students will be interacting with ‘personal language tutors’ in 2005 is a graphic description of how some of the benefits outlined above could be made real. However, it is apparent that none of these benefits are inherent attributes of the computer. All of these benefits are only ‘potential’, and will remain just that until situations are created in which these benefits can be realized. Perhaps this is an obvious point, but it highlights the fact that simply saturating a university with computers and other ICTs will not make that university a successful user of ICTs. The factors that make these potential benefits real must be cultivated to ensure that the benefits outweigh the costs. This is the subject of the final section.

6. Solutions to the problems: how to successfully integrate ICTs into a University language Curriculum

The successful integration of ICTs into a university language curriculum involves isolating and minimizing the problems described in section four, and then creating an environment in which the advantages outlined in section five can thrive. During the first stage of integration, acquisition, there must be a vigorous discussion about the motives for introducing ICTs and an analysis of exactly how ICTs will be incorporated to enhance the language learning program. Then, a discussion of what particular ICTs are needed in order for these goals to be met must take place. These discussions will necessarily involve an examination of the curriculum and an attempt to make it more cohesive so that there is a clearer set of goals to aim for. Additionally, those leading the drive to integrate ICTs into a language program must be prepared to demonstrate concrete examples of the technology in action. This is especially important with teaching staff that have a limited understanding of the possibilities of CALL. An absence of these consultative, discussion and demonstration phases will mean that teachers have no sense of
‘ownership’ towards the new technology, which in turn will result in under use of the ICTs.

In the introduction stage, there must be an IT literacy program for both students and teachers put in motion. In the case of teachers, this must include concrete examples of how to implement CALL in their teaching. Similar instruction has to be given to students. In particular, they need to understand how the technology relates to their studies in general. Another important element at this stage is where and how the technology is located. It was mentioned in section 4.3 that a failure to consider how teachers teach will result in the creation of computer rooms that teachers will not be able to use. A simple solution to this is the creation of computer rooms on non-traditional lines. That is to say, rather than having rows of computers fixed to immobile rows of desks, computers can be embedded into mobile desks. Embedding, or at least partially sinking monitors into desks will allow the teacher to easily see all his students. Having mobile desks will allow the teacher to put students into groups. It also allows for the creation of ‘non-computer spaces’; spaces in which students can turn to do tasks that do not need the use of a computer. A variation on this theme of ‘teacher-friendly’ computer rooms is the placing of some computers in every classroom. In a class that seats 30 students, 7 or 8 computers would be adequate since language teachers often have students working in groups. It is possible to write much more about the need to spend time on design and logistical issues. This is a far more important issue than most IT people imagine, and will have a critical impact on the success of ICTs.

The problem of IT skills again appears in the maintenance stage. Not only must there be an IT department willing to assist teachers use computers, there also has to be some technical advisers who also are intimately versed in the needs of ESL. In other words, simply providing teachers with the tools is insufficient. They need to be provided with training, both general IT training, and technical information specific to the needs of language teachers. For example, they need to know about sound compression in order to make sound files available to their students over the Internet. Just telling them that they can ‘upload’ sound files to a communal folder on the LAN is inadequate. Again, students also need to be given detailed and regular technical instruction. Ideally, this will become a virtuous circle: the more teachers that require students to use computers, the more students will be able to use them, and in turn the more teachers will feel confident that students will be able to do the things they ask them to so with computers.

In the maintenance stage the structural problems mentioned in 4.2 will become apparent. Their needs to be a willingness on the part of both teachers and management to breakdown the traditional hierarchical structure of universities so that there is more inter departmental, cross-departmental and trans-faculty cooperation. Without these structural changes it will be very difficult to foster a spirit of collaboration that is essential if ICTs are to be successfully integrated. Although this paper has addressed the topic of a language curriculum, it is in fact impossible to
isolate the needs of language teachers and students from the rest of the university. The incorporation of ICTs will almost always infringe upon the movements of everyone in a university and thus decisions at all stages of integration must involve all departments and faculties.

Finally, there is the issue of teaching. Language teachers themselves need to consider their teaching methods. CALL can only thrive in a less teacher-centered environment. Many of the advantages of CALL mentioned in section 5 assume that the student has been given more responsibility for their learning than is perhaps normal in the traditional language classroom. This does not mean that teachers need disown all their methods. In fact, there is a concept that is being increasingly referred to at CALL conferences that recognises that teachers do have different and effective ways of doing things that cannot always be accommodated in a CALL environment. This new concept known as ‘Blended Learning’ acknowledges the need of teachers to continue using some of their older methods whilst at the same time incorporating CALL where they feel it will best complement their teaching. Another solution or suggestion is that teachers must be more amenable to collaboration. The time required to set up many CALL projects is often prohibitive. However, if teachers are willing to collaborate and pool resources then much could be done. Effective collaboration will make the difference between a successful CALL program, and one that doesn’t even get off the ground.

There is one final factor that will contribute to the success of ICTs in a language curriculum. It is the continuous evaluation of the ICTs vis-à-vis the goals laid down in the initial acquisition stage. This involves using the four measures of success listed in section 2.4. This evaluation process should be a part of the overall departmental and faculty evaluation procedures. Once a rigorous evaluation process is in place it should then be possible to create an ‘improvement-spiral’ in which a system of protocols and examples of best-practice are continuously developed and improved so that the benefits of ICT are enhanced and costs reduced or even abolished.

6.1. Deep Integration

Deep Integration is the author’s conception of how a language course would look once ICTs had been successfully integrated. The concept of Deep Integration is partly inspired by Wiegel. In his book, ‘Deep Learning for a Digital Age’, he argues that institutions of higher education need to concentrate on how to improve the quality of education with technology, rather than simply trying to increase their audience through the development of distance education programs. He argues for the use of web-based collaboration tools, which emphasize ‘cognitive apprenticeship and communities of inquiry’. The author’s concept of Deep Integration includes Wiegel’s ideas concerning education, and also delineates the role of computers in a language course.

There are two sides to the integration of CALL into the mainstream of LT. There is ‘Broad Integration’, which is simply a matter of how many teachers somehow incorporate computers into
their teaching. From this perspective the more teachers that use CALL, the more integrated it is. Far more challenging is ‘Deep Integration’. The author argues that for CALL to have a significant impact on language learning, ‘Deep Integration’ is essential. Even if every teacher uses computers in their teaching this will not have a great impact as long as it involves them doing old things with new tools. This means that teachers need to understand that technology can be much more than just another tool, on a par with the other tools they exploit. Furthermore, much greater consideration needs to be made to how ICTs are used, and in particular the impact that their use has on language acquisition.

In a university in which there is deep-integration, computers will be pervasive but not obtrusive. That is to say, students and teachers will be able to access a wireless LAN anywhere on the campus. For those without a laptop, there will be computer stations throughout the campus. Through a Virtual Private Network (VPN) students and teachers will be able to access the LAN from any external computer. Once online students will be able to access all their classes. Some of these classes may be completely online classes, whereas others maybe the virtual environments for their real life classes. In either case, they will be able to access information about those classes, as well as language learning tasks for both revision and study. There will be ‘spaces’ for collaborative learning tasks, as well as areas where they can communicate one-to-one with their teacher. There will also be an area where they can share learning resources with their peers. Teachers will of course also have access to the same pages, but with higher level access rights they will have the ability to change the structure and contents of the virtual classrooms. They will be able to add and edit tasks. In addition, they will be able to access students’ records to see what they have been doing in the class, including scores obtained in quizzies made by the teacher. Office staff will also be able to access this system. They will be able to keep teachers up to date with information about students, and when necessary contact students. Thus, rather than being an irrelevance or hindrance, the computer becomes the portal onto a VLE that contains all the necessary elements of a university. If the VLE is well designed, computers and indeed the system itself will be unobtrusive, compliant and flexible to the needs of all the stakeholders.

7. Conclusion

The great expectations that were had of the computer in language teaching have as yet not been met due to a lack of consideration of the various issues involved in integration of ICTs into a language curriculum. The process of integration can be divided into three; acquisition, introduction and maintenance. At each of these three stages various problems can arise if the correct preparation is not carried out. These problems tend to fall into three areas; technology, structure and teaching. It is argued that with careful planning and the right ingredients in place computers will have a significant impact on language education. In the absence of this preparation, it is possible for individual teachers to practice CALL, but their effect on the
students’ life chances will not be as great as a concerted effort by a department to integrate CALL. Such effort could lead to the ideal CALL scenario depicted above as Deep Integration. Deep-integration will require some fundamental changes in the way institutions are organized and also to the way teachers conceive of their role and that of the computer. It is only with a determined effort by those that have the power to influence teacher and student training, curriculum development and university structure will CALL become fully and effectively integrated into a university language curriculum.

Bibliography

Books:


Journals:


Internet:

A report commissioned by the EC Directorate General of Education and Culture; “The Impact of Information and Communications Technologies on the Teaching of Foreign Languages and on the Role of Teachers of Foreign Languages” The report can be downloaded in PDF or Word format from the ICC website: http://www.icc-europe.com


Ruthven-Stuart, P. ‘Computers in Language Teaching Survey’ The Results: http://www.hokuriku-u.ac.jp/p-ruthven/survey/

Ruthven-Stuart, P. The author’s web site: http://www.nsknet.or.jp/~peterr-s/