



## **Article Title**

Rude Thoughts About IT in Language Education\*

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## **Bio Data:**

Thor May has been teaching English to non-native speakers, and lecturing linguistics, since 1976. This work has taken him to seven countries in Oceania and East Asia, mostly with tertiary students, but with a couple of detours to teach secondary students and young children. He has trained teachers in Australia, Fiji and South Korea. At the moment he is teaching in Chungju National University, South Korea. Many of his papers, essays and stories may be seen on his website at <http://thormay.net>

## **Introduction**

Information Technology in language teaching probably began with papyrus. It has attracted admirers and detractors ever since. This paper takes a slightly irreverent look at current IT, as well as its actual and potential uses in foreign and second language education. The power of commerce in IT development has always been a prime motivator, so the analysis here recognizes the essential economic context, with the resulting effects on language learning.

Some time ago I was approached by an entrepreneur who was thinking about getting out of the concrete pylon business and making a new fortune in the wonderland of Information Technology applied to language teaching. Concrete mixes surely have the odd problem with foreign bodies, but it seemed to me that IT and language education were an entirely less stable porridge. This short paper is a fairly crude attempt to label some of the elements in the IT-language mix, together with a few irreverent observations on the alchemy : past, present and possible future. Professionals in this trade may be piqued by more than the mixed metaphors here, but their search and mine for an occasional flash of gold in the pan will keep us all shovelling.

### **1. The commercial dynamic**

a) Someone, somewhere will buy almost anything, given energetic marketing. However, although commercial success is usually a necessary condition for an educational enterprise, it is not a sufficient condition for educational success. It is extremely easy to forget this when the money starts rolling in. The planet is littered with courses that contribute little to human competence (not only language courses) even though the schools and universities which host them may be profitable and prestigious. Everywhere there are bookshops bulging with language learning materials which make some publishers a profit but which are really little more (nor less) useful than the labels on jam jars for learning a language. Any program making use of IT will also be vulnerable to this condition. As with the audio-lingual frenzy which preceded it, the commercial (and hence political) enthusiasm for electronic information technology has only been resisted by a few techno-doubters;

(see Robertson 2003 for a discussion of this issue).

## **2. Is language teaching necessary?**

Language teaching and the products it gives rise to (schools, books etc), are probably the world's oldest confidence trick scams. The dropout rate in American foreign language courses can be up to 95%. (Asher 2003). What other profession or business could tolerate that kind of failure level? Even for a country where university freshman dropouts matches the divorce rate at about 50% (an incredible wastage on both counts) the language failure is extreme. In such an environment, a language course or 'method' which enjoys modest success can seem like magic. Foreign language programs in other countries have variable success, but a common pattern in formal education is a very low return on the teaching investment.

Where useful language learning is achieved, it is often by no means clear what contribution 'good' or 'bad' teaching makes, nor what 'good' or 'bad' resources really contribute. For example, in a country like Papua New Guinea, which has around 800 languages, and very little effective formal education for much of the population, it is quite normal for many people to have a working control of three languages. The same is true in India and many other so-called Third World communities. However, some countries with abundant technology and supposedly advanced education systems like Australia, South Korea and Japan are abject failures in transmitting a second language to the overwhelming majority of citizens. North European states are somewhat more effective. What is going on?

A percentage of learners in almost any human activity drop out, and only a limited number ever become true masters. Thus there is a kind of selective funnel. The problem with language education in institutional settings is that the funnel is shallow (initiates are lost quickly, although school systems may artificially retain failures 'in storage') and those who finally squeeze through are few. The characteristics of this learning funnel are too complex to explore in depth here, but we can note in passing that objectives (e.g. accuracy Vs fluency), and techniques or methods which are congenial to advanced learners (and/or the kinds of learners who progress to that stage) are not necessarily appropriate for the mass of learners who first enter the field. Similarly, the mix of technologies which can be usefully applied to language learning and teaching may well vary at different stages of the process. This is an issue which seems to have received too little attention.

There are also more general critical factors in language learning success. The main ones (I think) are a) motivation, b) consistency of effort, c) a real domain for using the new language, d) immediate, genuine 'reward' for communicative success, and e) competition for the students' time & attention. For example my home country, Australia, loses on all these factors. Second language ability is seen to be almost irrelevant to life success by most Australians. Native-born Australians speak the world's common tongue, English, and where interpreting is needed, a bottomless pool of immigrants can supply it cheaply for almost any language. Moreover, life in Australia is complex, fast, and has endless distractions. People are quickly drawn away from boring, difficult language learning. This attention problem sometimes also affects the very intelligent. In China, as a group the Ph.D. students who I taught seemed far inferior as classroom language learners to undergraduates

(English majors). There could be several reasons, but I suspect that the Ph.D.s had extreme demands from elsewhere on their limited available attention.

### **3. Geniuses, ordinary teachers, and machines**

I have only ever met a few truly gifted language teachers ( I don't count myself in that elite). What they seemed to share was a charisma and uncanny empathy with each student -- the kind of magic that would motivate people to do anything for them -- combined with a wisdom in offering just that information to a student which he or she could absorb in their present state of understanding. Such skills will always be rare, and no mass education system can depend on them.

What merely mortal teachers CAN do is minimize the disincentives to learning found in most large institutions, and be very cunning about competing for the attention of our distracted students, in and out of the classroom.

Any kind of technology used in language teaching is subject to the same iron laws of success as a human teacher. It will succeed to the extent that --

- i) attention is captured and held
- ii) content is memorable
- iii) students feel that technology and content are useful and adapted to their needs
- iv) systems are flexible enough to be modified
- iv) content and technology are physically accessible on demand

v) students feel strongly motivated to access it regularly

vi) the technology and content comes at a price which the market can bear

#### **4. The awful example of the Audio-Lingual Revolution**

There are now good and bad audiolingual courses, either of which may be used smartly or foolishly. However a generation ago the arrival of the tape recorder in mass consumer markets gave rise to a marketing frenzy in the language teaching business. It happened to coincide with the academic fashion of Skinnerian operant conditioning (training rats in mazes with incentives etc). Suddenly language learning success would be guaranteed to everybody. No school was properly equipped unless it had an expensive Tandberg language laboratory, and fat volumes of drills in the desired target languages (e.g. see Ledgerwood 1996). Cohorts of students were bored frantic, trapped in their lab booths, repeating stupid, often unrelated sentences over and over. Some human beings are remarkably determined, and a few even learned a foreign language in this way, particularly if they were auditory learners; (I'm a motor learner myself - I learn best by writing or doing things physically). But of course there was a reaction, and language teachers went searching for a host of other 'magical' solutions.

The audio-lingual crash was a prime example of 1960s geek-talk being taken over by the commercial markets, turned into a commercial product and flogged to a mass consumer base. It made money, but there had to come a moment of educational truth. So-called advanced IT will go the same way in education, unless it is tamed as a tool.

The purpose of this little paper is not to discredit technology, but to gently remind us of the effects that technology can have. Even where technology uptake seems to succeed, the Law of Unintended Consequences can spring surprises in language teaching and learning. There are twenty-four hours in a day, and considerably fewer in a language classroom. We can easily spend an hour fiddling with some clunky video display when the same hour given to conversation would have been immensely more beneficial.

That's not all. Lawrence McCluskey (1994) slyly introduces McCluskey's Corollary to Gresham's Law: "Lower-order thought processes drive higher-order thought processes out of circulation;" (Gresham's Law is the dictum that bad money drives out good). Thus half the population, for example, can no longer do a simple multiplication because calculators are ubiquitous. In other words, when it comes to language education, we have to think carefully about whether a bit of technology in the long run will add to language skills, or amputate them.

The learner always comes first. Tools can change, but learner psychology will not change (though it may be subverted). Nor will many teachers change easily. Most language teachers, and a high percentage of students, are more or less technological imbeciles. Many even have trouble working a tape recorder efficiently (teachers and students). New technologies must therefore be idiot-proof, or at least care needs to be taken in skilling teachers in such technology (e.g. see Nellen 2001). This is one argument for making the maximum use of existing, familiar technologies like TVs and mobile phones.

### **5. So what can we do with Information Technology in language learning education?**

The current concept of IT embraces widely divergent technologies, although the links amongst them are becoming more fluid. Those elements most useful in education are likely to grow from an innovative marriage of the old and the new. For example ...

a) the science fiction cyborg is a mixture human and machine components. Future language teachers may well act like cyborgs in marrying their own abilities with a variety of technologies. Thus it will be increasingly easy to deal with students who are displaced in space and/or time. Writing has given us that ability for centuries, but the Internet, telephony, video telephony, even 3-D holography will give the process dramatic immediacy. With immediacy comes the chance to boost motivation. For example, skin-sensors may well be able to transmit the emotional reactions of students in another country and culture, even where language fails. Wisely used, that could be a powerful tool.

b) There are already numerous initiatives underway to coach students in language over the Internet. These range from dealing with entire classes to one on one tuition. The Internet is such a multi-faceted and enabling technology that it has created a whole new internationalized culture. This in itself provides an added set of reasons for becoming multilingual. The effect will only accelerate as broadband becomes the norm, access prices fall, and mobile usage spreads.

i) At its simplest, the Internet is a huge database. Individuals and institutions have used it

extensively to store, organize and present an endless range of information on language learning and language teaching. Thus anyone with good Internet access who intends to learn a language can use resources which were unthinkable even a decade ago. The quality varies widely, and the cost ranges from free to commercially prohibitive. Now information access is often less a supply problem than a user problem of available time, skills, initiative and intelligence.

ii) Almost all educational institutions now have some kind of Internet presence. For a diminishing few it is merely an electronic advertisement. Others would not exist without it, and offer the full range of Internet learning technologies and resources. Most now use an online Learning Management System (LMS) to organize and present content. There is a vigorous contest here between commercial products and open access, sometimes free, systems. The best of these LMS systems encourage both simultaneous and asynchronous interaction between students and teachers by creating an online workspace. Again the full potential is often inhibited by staff or students who are unskilled or even allergic to making use of technology.

iii) An emerging technology which (I think) could have a profound effect on the use of the Internet for language teaching is asynchronous voice communication. That is, the spoken message is stored for later access by a receiver. Some readers may be familiar with 'voice mail' - a kind of remote message recorder. An online limitation of this has been the large amounts of electronic memory and bandwidth devoured by even digital sound. However, the Wimba Company has integrated asynchronous voice communication with an LMS in a

way that is proving extremely popular with harried lecturers and students. Now the public domain LMS, Moodle, is researching a similar system. Behind the scenes, a lot of work is being done on Voice XML to drive technologies like this. For most people voice is both quicker and less intimidating than print, but up to now online chat has required both parties to be simultaneously available.

iv) Every one of my Korean students has an e-mail address. E-mail is a related but different technology to the Internet. It has spawned its own problems and opportunities (e.g. see Gonglewski et. al. 2001). We are all familiar with the commercial nightmare of spam. However, a range of international publications like newspapers are now also available via this medium, usually for free, while there are thousands of list-servers to keep special interest groups informed (e.g see the University of Oregon English Mailing Lists). E-mail's use as a language learning medium has been slower to develop, although a large amount of unstructured communication takes place amongst pen-friends etc. Since e-mail is both asynchronous and simple, it does offer certain teaching advantages (and limitations). Voice e-mail programs have been available for quite a while and should offer special opportunities for language exchanges.

c) Mobile phones are now ubiquitous and have an ever multiplying repertoire of functions. It would be foolhardy to ignore a language medium as powerful as this. My students can use them for dictionary lookups, as a database, for web access, games, text-messaging, and videos, as well as chatter. This urge to chatter says something profound about the nature of the human cognitive language machine. Students may turn up to class without an exercise

book or pen, but never without the mobile phone. With the spread of mobile phones, telephone tutoring is also beginning to appear. SMS text messaging on mobiles is another obvious medium for language teaching. A problem with all of these attempts (as with ordinary teaching) is that the services of skilled tutors are comparatively rare and expensive. Can the tutors be replaced?

d) Some low wage countries, especially India, now employ thousands of call-center staff fluent in English to service clients in English speaking countries like the United States and Australia. It is conceivable that an elite of such Indian call-center staff could be trained to tutor English in other countries, using the same kind of intercontinental line-leasing arrangements as existing call-centers. One can envisage all kinds of problems in getting this business up and running (not least the training costs), but it seems possible in principle. However, many normal call centre staff in India are already finding the pressure of having split cultural personalities debilitating. The communicative intentions of, say, a twenty-year old female student in Shanghai and a 40 year old male Indian teacher in Hyderabad will easily go astray.

e) Computer voice recognition is a kind of holy grail for the IT industry. There has been some progress with native-speaker voices in controlled contexts (e.g. software like Dragon Voice). However, useful computer voice recognition for non-native speakers in a language learning context seems to me to be well over the horizon. Bear in mind that cross cultural communication (indeed much in-country communication too) is not merely the recognition of phonemes (difficult enough) but involves a constant clash of cultural presuppositions

which require sophisticated choices for a human being (let alone a computer) to decode.

f) Talk bots : In the 1960s artificial intelligence researchers were amazed to discover that some psychiatric patients preferred to 'talk' to a computer program called Eliza. Eliza, written in the Lisp programming language, was an assembly of non-committal recorded comments and questions, triggered by key words in the patients' typed sentences. In fact Eliza mimicked the mirroring behaviour beloved of live psychiatrists, but patients felt safer with the machine since it was non-judgemental. A number of more sophisticated "chatter-bots" have since been developed. The enthusiasts for this technology see chatter-bots as a way to encourage fluency without the expense of hiring tutors (see the links in the reference section below).

d) Experienced teachers know that students are often greatly assisted if they can be persuaded to adopt another persona in the learning process. It seems to free them from the inhibitions of their normal personality. The oldest, and still one of the most effective tools in this game are puppets. Drama, dance, songs etc. are other manifestations. Now the Internet has given us whole new worlds, literally, where people not only adopt new personas, or "avatars"(they even buy them in many interactive games), but may become immersed in them for weeks at a time. There is an obvious opening here for language teaching/learning. Success in constructing such a medium for language teaching on a mass scale would require genuine talent (of the order that goes into feature film productions), and the developmental costs could be high. However, given the right environment there is scope here for a real teaching revolution. Early hosts to the emergence of avatars in

language learning were MOOs or multi-user environments. These virtual worlds may be entirely text-based or supported by an actual online 3D visual space. As with novels versus video, text-based MOOs are imagination-rich and sites such as Schmooze University attract a dedicated clientele.

e) When it comes to capturing the attention of the video generation, video parlour games (and their computerized relatives) are fierce competitors. In South Korea (where I work) everyone under twenty seems to spend a large part of their lives in these places. We are not going to beat the video parlours, but we might subvert some of them. Again, it would take great cunning. Wrestling with the inflections of a foreign tongue has not given past generations the thrill that kids get from blowing electronic heads off. As with computer gaming, this is a subversion requiring real talent and creativity, genuine empathy for the clients, and probably high development costs. Again though, the payoff could be impressive, especially if "educational game parlours" were staffed by competent tutor-advisors.

f) Simulators have been around for a long while now, but are usually restricted to training high level professionals like aircraft pilots and (increasingly) doctors. Flight simulators have been partly mimicked by computer game programs. There is no reason that training simulators cannot have voice accompaniment, thus combining skill training with language training. For certain kinds of students this is the only sort of language training that will ever work. The TPR (total physical response) method of language teaching exploits the fact that many people are tactile and motor learners. They learn by doing. One can envisage "talking

tools" simulators in virtual environments. For example, as a mechanics trainee tightens a (virtual) nut it could squeak "hey! too hard!" and sheer off. The language simulator concept has now apparently been sold to the US military (see articles by Eng, Mankin, Mote et al 2004).

Speech can be used in three ways in simulated environments : i) to comment on a performed action; ii) simultaneous with an action; iii) to warn or instruct before an action, and hence anticipate consequences. The third option might be the most powerful in language teaching. The drawback to simulated environments in language teaching is that, at least at present, they require expensive software and hardware which is not available to large numbers of people -- and certainly not in countries like China.

f) Certain consumer electronic items are so widespread in the population that it seems almost perverse to ignore them as teaching tools. Television has spawned TV Universities, and large numbers of language courses. Countries like China and South Korea have run TV English courses for years. The best of these programs sometimes feature presenters and styles that become nationally famous. The worst are mere camera shots of talking heads. A limitation of even the best TV is inflexibility and inability to offer student feedback. Broadband cable TV offers some scope to remedy this, although TV production is an expensive business.

MP3 players are natural language learning tools. I hardly use a tape recorder for language learning myself anymore. It is so much more convenient to convert the language tapes and

audio CDs to MP3 (in violation of all copyright!). The player is so small that I can carry it around in my pocket anywhere. It uploads and downloads to a computer instantly, and has a built in microphone. Only inertia and fear of piracy in established publishing companies can be stopping them from offering downloadable MP3 language learning material. The piracy concern is legitimate, but not beatable now or in the future. Probably the only way around it is to keep offering added value (new content) from a paid source.

For a certain age and income group PDAs also offer an obvious channel for language learning content. This is especially true of devices like the Sony Clie which has multimedia capabilities. As with MP3 players, PDAs are carried around, offering instant access in quiet moments for busy people. Something to watch is that languages like those in the Middle East and East Asia have special fonts which only some PDAs can handle. In South Korea at least mobile phones have squeezed out PDAs.

## **6. How can IT learning technologies be spread?**

a) IT learning technologies may spread through traditional educational institutions and teachers. This is a captive market. A drawback is that competition against existing educational mediums (teachers, books, language labs etc.) is rarely welcomed and may be actively suppressed. Purchasing choices tend to be conservative, using institutional rather than personal funds. On the other hand, when purchases are made, they are often of high monetary value. Large corporations like Apple and Microsoft have actively given away products to schools to help language teaching etc., with an obvious commercial intention to create long-term dependence on their proprietary formats.

b) IT learning technologies may piggyback on existing consumer markets for music, games, videos etc., or even packaged food. This is truly mass marketing. In the past educational piggybacking of this kind has sometimes conveyed a strong flavour of propaganda. For example, Singapore and China have both been venues where Big Brother teaches the masses some brand of "virtue". Naturally there is always a degree of resistance and distaste for propaganda. This unfortunate legacy may have to be overcome if language teaching is to be piggybacked extensively on existing media. A special case of piggybacking is the religious market. Both historically and currently much of the most energetic language propagation has been to advance one creed or another. Whatever the virtues of these religions, their agents and their resources continue to play a significant role in spreading both literacy and knowledge about the world's languages.

c) IT learning technologies may develop unique channels of consumer access. This is not easy, but it has been done in other fields. For example, personal computing software has created its own market (there was no such market when I went to school in the 1950s and 1960s). The key to rapid, wide acceptance is usually an open architecture and 'giveaway' policy. The idea is that when demand becomes intense, added value can be offered at a premium price. The shareware computer industry runs on this principle. The risk is that if a product becomes too successful, not only will it attract a host of imitators, but it may be swallowed whole by a monster like Microsoft. For example, Netscape essentially made web surfing available to the Internet public, but was then buried through ruthless business practices by Microsoft's Internet Explorer. Electronic bilingual dictionaries are a contrary

example of highly proprietary and expensive language products which have gradually spread amongst customers with a pressing need - notably tertiary students in non-English speaking countries.

### **7. Are There Business Openings In "IT for Language Teaching" ?**

Many of the technologies referred to in this paper have developed in parallel in both commercial and not-for-profit environments. This pattern is a characteristic of products with a high intellectual property component, and often reflects competing ideologies. The tension engendered by such competition can be healthy, and in practice there is a good deal of cross-fertilization. We see this very clearly in the Open Source Software Movement, with derivative commercial developments such as the various flavours of Linux often spinning off at a later stage. It is also clear that technology related to natural language learning may range from the very simple (a pen and paper) to the very complex (such as computer simulated environments for language learning). We know that people have learned languages from time immemorial. We know that snake oil merchants have marketed instant fixes for language learning from time immemorial, and that many continue to make a tidy living out of it. There will always be business openings for "IT in language teaching", but we would be credulous to expect a magic bullet anytime soon.

The IT revolution is not done. Within a decade all human knowledge will be storable in a single grain of sand. Millions, maybe billions of people will be reading "online" daily, but online will not be staring at an electron gun. The industry prophets say we will be reading flexible stuff that looks rather like today's newspaper.... In other words, whatever is begun

now must be recognized as transitional, and designed for rapid change. However, human beings within a given generation are not particularly adaptable.

Whenever a business, a school, a factory is founded a new generation learns new things. Then they become comfortable, they develop a daily routine, and their priorities naturally enough revolve around bringing up their own families. What this means is that institutions automatically ossify and resist change, ignore new opportunities and actively seek to undermine competition. Indeed, in any hierarchical institution managers at every level will mostly exclude individuals and ideas which represent a threat to their own mediocrity. Luckily, the individualized and non-hierarchical nature of the Internet may short-circuit some conservative rigidities in the evolution of IT for language teaching.

For an entrepreneur who is serious about combining an element of Information Technology with language teaching into a viable business, there are sure to be lots of openings. However, with the preceding paragraph in mind, it could be wise for both financial and intellectual adventurers not to trade all commitment into a single basket. One successful business strategy has been to establish some kind of foundation which keeps a certain distance from individual projects, and can therefore maintain perspective. Many possible projects in the IT-Education area will have serious development costs. A foundation can therefore also spread risks, and be a medium to redirect part of the cash flow from successful initiatives into more experimental options which show promise but need a longer lead in.

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### **Some Relevant Internet Sites**

A.L.I.C.E. and AIML Chat Robot News October, 2004 - a talk bot website

Andreas Lund's links to English as a second, a foreign, Another Language: BOTs, Robots, Chatterbots...

The British National Centre for Learning Languages has a useful page of links at Linguanet into the whole issue of Internet and e-mail language learning.

CAL Center for Applied Linguistics, Washington DC

CALICO Journal (Computer Assisted Learning instruction Consortium)- Texas State University - a good collection of articles on CALL. Papers from 1983 to 2000 are viewable online; later material requires a subscription

The CALICO Review - Reviews of CALL language learning programs on the market, sorted by language

CALL on The Web - links by Claire Badin Siskin

COMFM - live TV on the Internet from every continent, multiple languages

Course Website (CMS) Programs - listing by Excite Search Engine

English Raven website The Audiolingual Method - this is a useful summary of this method's characteristics

Language Learning Technology Journal - all articles available online

Learning Languages - Micheloud's homepage on how to learn any language

LRNJ (Slime Forest Adventure) - A free role-playing game for learning Japanese

Online Learning Update University of Illinois at Springfield - online learning news and research

The Palace - a chat community built around a software program of virtual worlds and avatars.

Schmooze University - a center for MOO (Multi Object Oriented) communal games and activities in language learning

University of Oregon English Mailing Lists - an example of list servers dedicated to Second Language SIGs (special interest groups)

Virtual Human Web Resources - links to many forms of the emerging bionic man

Windows User Network - a few shareware computer games, some of which might be adapted to simple L2 learning

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