

# USING THE WEB TO ENHANCE LANGUAGE TEACHING AND LEARNING AND DISTRIBUTED COGNITIONS IN A CONVENTIONAL SUB-DEGREE SETTING

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**Index:** IT, Distributed Cognitions, interaction, English teaching

**Abstract:** This paper examines the functions and uses of IT, specifically the internet for educational purposes in general, and for the teaching and learning of English in a sub-degree course in particular. The design of an exercise in an English course at sub-degree level, with the objective of using the web to encourage interactive discussion among students and staff and the development of distributed cognitions (Pea, 1993) and “person-plus” (Perkins, 1993) in the students, is looked into and its effectiveness analysed. Some of the problems arising from the exercise are discussed as well.

## INTRODUCTION

The buzzword which is carried over from the last decade of the 20<sup>th</sup> century into the new millennium is information technology (IT). To the information technologists, the internet, which makes a significant component of information technology, is an epoch-making idea and the most transforming invention in human history. The internet is predicted to turn business “upside down and inside out” within a year (The Economist June 26<sup>th</sup> 1999, *Business and the Internet*, p.1). If information technology is expected to have such revolutionary effect on the business world, what impact does it have on education, and in particular, language education, which is considered particularly resistant to the application of information technology?

This paper sets out to examine the use of IT for educational purposes at tertiary level, with a particular focus on how the web is used to improve the teaching and learning of English, and to enhance the learners’ distributed intelligence in a conventional educational environment (conventional vs. distance learning type) at sub-degree level.

## BACKGROUND TO THE USE OF INFORMATION TECHNOLOGY IN TEACHING AND LEARNING AT CITY UNIVERSITY

The case study this paper examines is based on the development of a web-based exercise in an English course in City University of Hong Kong. Despite the availability of many high-tech computer facilities in the City University of Hong Kong and its high-tech image, much of the use of computers in the teaching and learning of many courses (particularly humanities ones) at the end of the millennium has been restricted to the use of PowerPoint slides in lectures, and the use of email for staff-student communication outside the classroom. For the more innovative teachers, their attempts in using IT have been limited largely to putting PowerPoint slides, course materials, tests and exercises on the web for student access. As stated in the University’s Strategic Plan for the Development of Information Technology announced in May 1999, the predominant use of IT to support learning, teaching and research throughout the University “will revolve around the Internet

and the growing use of the Web to present course materials and to assist in the complex process of course management”.

The language teachers in general have been rather sceptical about such applications of information technology as most of the language teaching is done in tutorials rather than lectures, hence putting PowerPoint slides or course notes of lectures on the web is not relevant. On the other hand, putting multiple choice or fixed answer type of exercises or tests on the web represents a very limited type of activity which is too restrictive for teaching and learning of languages at an advanced level when students are encouraged to use the languages more for creative and interactive purposes. Many of the language teachers believe that since much of language teaching and learning should be done through face-to-face or interpersonal interaction, computer-mediated communication, which obviates face-to-face interaction, will severely constrain it.

While many language teachers realise that they need to change and adapt some of their teaching methods and approach to incorporate the use of IT so as to meet the stated institutional goals and strategies, they need to think hard on how they can use IT profitably to enhance interaction. To be able to maximise the benefits of IT, it is necessary for them to understand what the new technology involves, what opportunities it can and cannot afford. As Fullan rightly points out, for change to be brought about effectively, those responsible for implementing change need to make sense of what change is about and why it is being suggested (Fullan, 1982). As frontline change agents, we need to face change ‘head-on’, “exploiting change before it victimizes us” (Fullan, 1991:345).

## **CONTROVERSY ABOUT THE USE OF IT IN LANGUAGE EDUCATION**

Much of the negative feelings about the use of IT in education paradoxically arise from what is originally its strength. The expectation that the use of IT “will free education from the constraints of time and space”, as proclaimed by a UK university vice chancellor (M.Fitzgerald, Times Higher, July 1996), strange enough is also perceived as a threat and a limitation. Besides the fear that such development “threatens the sense of community inherent in conventional institutions that is so valuable to students” (Light and Light, 1999: 162), there is also a fear that students will be cut off from interaction with each other in communicating with and through the computer, as Light and Light (1999) point out, “Information technology is sometimes seen as threatening to cut learning off from the interpersonal contexts which give it meaning and utility” (163).

A closer look at what learning involves will reveal that it is not just “a property of the minds of individuals” as many people believe (Pea, 1993: 47). As Pea points out, practices of cognition or learning rarely works alone. In Pea’s terms, human cognitions are distributed, “The intelligences revealed through these practices are distributed – across minds, persons, and these symbolic and physical environments, both natural and artificial” (1993: 47). It’s only through activity that “connects means and ends through achievements” (ibid.: 50) that distributed intelligence is manifest and realised. Hence learning in educational settings, should not be concerned largely with solitary intelligence as they seem to have been now, but rather, it should be concerned with the development of intelligence distributed across minds and persons through fostering interactive activity. Pea also argues that “computer technologies mediate human interactions with nature, information and other persons in distinctly different ways” (ibid., :57), just like the use of physical machinery in farm labour.

Harping on a similar note, Perkins (1993) advocates the ideal of an educational process “oriented more toward the person-plus, empowering learners to capitalize with greater awareness and art upon the cognitive resources afforded by the physical and human resources around them – indeed, empowering learners to construct around themselves their personal “plus”, their own surround for

an agenda that will evolve with that surround” (Perkins, 1993:106). It is important for an educational institution such as a university to encourage interaction in a group which “involves a multitude of complications and a maze of cross-talk not encountered in solo decision making” (ibid.: 98). Hence any use of the web for teaching and learning purposes should help empower the learners to make full use of the physical and human resources around them through interaction and collaboration.

Language teachers are particularly concerned about the development of the person-plus and enhancement of distributed cognitions among the learners, because language as a form of social behaviour involves communication between, and among people (Oxford, 1990: 144). As language learning involves interaction with other people and social strategies are very important in the process of learning a language, IT will have to be able to enhance interaction.

Can IT enhance interaction? In offering a socio-cultural perspective on the human-technology link, Säljö argues that it can. He points out that the full realisation of the potentials of such experiences “will rely on students’ access to conversation partners who carry on discussions”. He stresses that “technology should not be seen as replacing such communication but rather as providing a resource for supporting it” (1999: 159). Even in 1989, Graddol already points out that one of the advantages of computer mediated exchange over interaction in face-to-face settings is that it does not depend in the same way upon interruption and attention-getting skills. Bannon (1995) also argues that computer-mediated exchange can provide opportunities for those students who are too inhibited to speak out in face-to-face situations.

Fetterman (1998) in discussing the beneficial use of the web for educational research and instruction, cites the case of “virtual classrooms” that he set up on the web at Stanford as an example to illustrate how the web could be used for generating interactive discussions. A discussion is generated through the critique he provides of students’ assignments posted onto a series of folders, as well as criticisms and comments from the peers. He sums up the benefits to be “the ability of students to see one another’ work and thus benefit from a peer review, time for thought and reflection through posted comments, the ability to save or archive discussion for analysis or additional discussion, the ability to conduct classroom instruction or to post messages while travelling or being on site” (28). However, he also acknowledges that there are some problems such as “initial difficulties navigating around the virtual classroom and visibility” when “everyone is on display” and “faculty need to respond to each student’s comments”. The benefit of transcending “the boundaries of the classroom” is both a benefit and a drawback: the extensive discussions leading to endless dialogue incurs much more “additional discussion time” (ibid.)

In looking into the case of skywriting (a term coined by Harnad (1990) to refer to the use of multiple reciprocal e-mail in academic discussion) in the University of Southampton, Light and Light (1999) report a very similar interactive experience using the web for discussion which resembles that of a symposium (165). However, they also find that the predominant mode of exchange is one of question and answer rather than critical comments which the students feel uncomfortable about. They observe that even at this level, students seem to have difficulty in separating personal criticism from criticism of ideas. (ibid., 1999: 171-175). Furthermore, none of the students in the skywriting project “would willingly have sacrificed face-to-face sessions in favour of skywriting” (ibid. 1999:175). That means the use of such information technology can only have a supportive role and cannot replace face-to-face contact, and hence cannot save educational institutions from the constraints of time and space.

## **THE DESIGN AND IMPLEMENTATION OF A LANGUAGE TEACHING ACTIVITY USING THE WEB**

With the discussion on and examples of what IT and the computer could and could not do, as well as should and should not do for teachers and learners in the background, the designer of an English course in City University of Hong Kong then set out to develop a web-based activity in writing in the first Semester of 1999. Understanding that in a software package developed by University of British Columbia called WebCT, there is a bulletin board feature which is a kind of chatroom, allowing users to post their writing and readers to respond, the designer of this English course decided to use this feature for developing a writing exercise.

This English course concerned is the first common English course offered to the first year students of four sub-degree language programmes, which are Higher Diploma (HD) in Applied Chinese Studies, HD in Applied Japanese Studies, HD in English for Professional Communication and HD in Translation and Interpretation. The English level of students varies a great deal as these different programmes have different admission requirements for English. The students' level of competence in English in this course can vary from that of the very competent second language users to that of the relatively weak ones.

As most of these students come from a secondary school environment which is teacher-centred, the assumption is that students who have come through an educational system as such usually have not had much opportunities to use the language actively for interactive purposes. One of the purposes of the course is to activate students' competence in English as a second/foreign language, which they have acquired in both their primary and secondary education, and provide them opportunities of putting their latent competence into active use. To encourage students to express their ideas freely and to practise their writing skills, the course designer previously developed a journal writing exercise, asking students to write three journals in several weeks. However, the exercise was done by students individually, with practically no element for sharing of ideas, not to mention collaboration, among the students.

The course designer saw the bulletin board feature of WebCT as a very good tool for developing collaboration and distributed cognitions among students and decided to modify the previous writing exercise to incorporate the use of this feature. Instead of asking students to write three separate journals in several weeks, the designer assigned each tutorial class two weeks for collaborating in writing journals/diary entries to cover each day of the designated two weeks. Different classes were assigned different weeks for posting the journals onto the bulletin board on WebCT set up for the course. Students were also asked to ensure that there were more than two journal entries for each day as they were asked to select the best journal(s) for each day to be posted onto the bulletin board. The students had to work out among themselves a roster system in which the journal entries on each day were covered. To ensure fairness, they discovered that they had to discuss among themselves in class a way of assigning the writing task so that no one would have an "unfair advantage" over the others. (Students having to write the journal on weekdays were perceived as having drawn a short straw and those who had to write on a Saturday or Sunday as having an advantage since they would have more time to do it and they might have more to write about as well). So even in working out a reasonable and equitable work schedule among themselves became a good opportunity for training not only their spoken English communication skills, but also their distributed cognitions and 'person-plus' in problem solving. It also provided students a good reason for collaborating with each other in working out a reasonable scheme. Furthermore, the fact that their journal entries would no longer be restricted to the readership of the tutor, but rather, would be read by the rest of the class, and if written well, would be read by other students and tutors of other classes, gave them the desire and motivation to put more effort and thinking into the writing task.

After writing out their diary entries, students were asked to bring to class a hard copy of their journals and post them up on the walls and boards in the classroom according to the day of the entries. Students were asked to walk around in small groups of two to three, reading the posted up journal entries, giving short written comments and suggestions for improvement on the side or at the end of the journal, which was another opportunity for students to collaborate with and help each other in writing. Afterwards, students were to select among themselves the better written journals for the day to be posted onto the course bulletin on WebCT. Over the selection process, they had to justify to the other students in the class why they thought a particular journal was better written than the others. Students whose journal entries were selected were asked to do revision, taking into account of other students' comments and suggestions, before posting the entries onto the WebCT bulletin board for the course.

Following that, students were encouraged to log onto the bulletin board of the course on WebCT to read the journal entries from the other tutorial classes as well as from the other programmes and give immediate feedback to the posted entries they have read. Feedback comments from the readers on the journal entries were listed under the corresponding posted entries so that the other readers could also share their views. The composers of the original journal entries could easily check against their own entries what feedback they have obtained from the readers. New entries either in form of diary journals or in form of feedback were flagged with an icon to facilitate the readers.

## **EVALUATION OF THE SUCCESS OF THE WEB-BASED ACTIVITY**

The achievement of the objectives of the activity using WebCT was evaluated in several ways. Globally, the whole activity was reviewed to see if the students' distributed cognitions and 'person-plus' were enhanced through observation of students' response in class as reported by the respective tutors as well as on the bulletin board. Feedback from tutors on the teaching team and students were obtained through interviews. The specific improvement of students' writing skills was looked into through verbal feedback from tutors and students.

From tutors' reported observation of students' discussion in working out a reasonable schedule for collaboration, students' interaction in negotiating for the most reasonable scheme was both natural and enthusiastic since it was in everybody's interest to work out a schedule acceptable to all. In a subsequent session when students walked around the class to give comments and suggestions to each other, they were also reported to be very spontaneous in giving encouraging comments to each other, demonstrating much interaction between the writers and the readers. There was sufficient demonstration of their development of distributed cognitions and person-plus in these pre-web forum activities generated. However, similar to what Light and Light (1993: 171) reported in their study of skywriting in University of Southampton, students were rarely critical of each other's work.

In terms of feedback on journal entries in the bulletin on WebCT from both students and tutors, the response, particularly in the first five to six weeks, could be said to be enthusiastic. However, enthusiasm in writing feedback tailed off towards the end of the semester, as the novelty began to wear off and deadlines for other assignments came in a crunch. The feedback to the posted journal entries given in the bulletin board was also mostly encouraging remarks or sharing of similar ideas or experience.

When asked why their comments and feedback concentrated mainly on sharing of ideas, experience and encouragement rather than critical comments on how their peer writers could improve their writing, the majority of the students said that they didn't want to "hurt the others' feelings" or "hurt the friendship". Another possible reason that the tutors guessed was that the students didn't want to

receive critical comments from their fellow classmates. They tended to take critical comments from their fellow classmates rather personally and they were afraid that their critical comments might be reciprocated. Furthermore, many students felt that critical comments should best be given by the tutor or a person with authority. A student said that she felt students could learn better from encouragement and praises rather than criticisms. She cited her sense of failure in the past developed from the criticisms she and her classmates received in her secondary school days as an example. That was the reason why she had been giving positive and encouraging feedback to her fellow classmates as well as to the journal writers from the other classes.

The tutors found the discussions generated both in class before and after the students' writing and on the web to be very engaging, spontaneous and interactive. Students interviewed also reported to have developed an interest in reading journals and comments posted on the web by other classes and giving their feedback to some of them, a form of interaction which students could not have without this feature of WebCT. They were also interested to find out how well the other students could write and what range of topics they could write on. Many of the students felt that they could learn from each other not only writing skills, but also some of the subject matter and experience cited.

Tutors who taught the same course last year also reported better quality writing in the journals as students were aware of the wider readership of their writing. A number of tutors have given encouraging comments to students' journals from students of the other classes on the bulletin board, which gave much incentive for students to check up the bulletin board regularly.

All in all, the global and specific purposes and objectives in the design of the activity can be said to have been achieved quite successfully. It was considered a very useful learning experience to the course designer, tutors and the students. However, like what Fetterman (1998) points out, extending the discussion "can lead to endless dialogue" (28). Even though they found the activity to be useful and rewarding, they all felt that they had spent a tremendous (perhaps a disproportionate) amount of time on it.

## **IMPLICATIONS FOR FUTURE DEVELOPMENT**

From the case study on the use of the web in the development of a writing exercise in a conventional university setting, we can see that IT can be used to promote and develop interaction among students. Instead of using IT just for course material presentation and course management purposes, which are very much teacher-centred and unidirectional, IT could be used profitably for interactive, collaborative activities in form of a discussion forum. Through exploring and exploiting such features of IT, not only can the students' distributed cognitions and person-plus be further developed, but their interactive and interpersonal skills as well as writing skills can also be enhanced. Language teachers should no longer dismiss IT as incompatible with interactive language teaching and learning, but instead, should take an active role in exploring its strengths to enhance the effectiveness of teaching and learning.

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