PARADIGM SHIFTS IN ENGLISH LANGUAGE TEACHING AND LEARNING • Deng et al.

CELC SYMPOSIUM

Bridging Research and Pedagogy

National University of Singapore

PARADIGM SHIFTS IN ENGLISH LANGUAGE TEACHING AND LEARNING

*Selected Papers from
the Inaugural CELC International Symposium*

EDITED BY
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Victor Matthew Cole
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Contents

Foreword

The papers in this book were selected from among those presented at the Inaugural CELC International Symposium, held at Hilton Singapore on 3-4 June 2004. The theme of the symposium was 'Paradigm shifts in language teaching and learning: Teacher roles and learner responsibilities'. The event was attended by over 180 participants. These comprised mostly teaching practitioners and researchers not only from Singapore, but also from other Southeast Asian countries such as Malaysia and Thailand. There were also participants from as far away as China, Hong Kong, Japan, Australia and the USA.

As a central part of its mission, the Centre seeks to empower our students with effective English language and communication skills for their academic and professional life. We recognize this task requires a commitment to innovative teaching, dedication to promoting independent learning as well as investment in time and energy to carry out pedagogical research. It is these three elements which we had hoped to focus on during our two days together.

When we chose the theme for this Symposium, 'Paradigm shifts in language teaching and learning: Teacher roles and learner responsibilities', one of our goals was to provide an opportunity for the symposium participants to reflect upon and discuss some of the key issues we language teaching professionals are facing in this era of information, globalization and technicalisation: What paradigm shifts have we been through in our profession? What do these paradigms mean to us practitioners? What implications do these paradigm shifts have for our classroom practices? What new roles should we teachers adopt and what new responsibilities do our students have to assume in these paradigms of teaching? We hope that the papers in this book will provide you with some answers to these questions.

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1 Understanding Paradigm Shifts in Language Planning in Education in Singapore

A teacher educator's perspective

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Singapore stands out as one of the few multilingual countries that have successfully used the resource that language diversity has and harnessed it to promote economic growth and social cohesion. The results of four decades of language planning for education are increased competence in English, rising levels of biliteracy and strong socio-political support for all four official languages. Syllabus and curriculum materials have evolved from teaching the English language to using it for communication purposes and as the sole medium of instruction. The paper will examine what has been achieved via language-in-education policies and new challenges for language learning and use in rapidly changing economic, social and cultural environments.

Context

Any accounting of language planning in education—and any assessment of how successful it has been—must be judged by the challenges such an enterprise faced, the quality of the policy responses, quality of implementation, and how school leavers use and what they believe about the language skills they were taught, possess and can use. Thus, Singapore's unique historical, social, political and linguistic ecology must be the starting point.

The best way to understand the role of languages in Singapore society is to recognize that the state in Singapore used language to build human and social capital—and, one might argue, continues to do so. It sought, through language, to address two issues, first, of transforming the economy, from entreport to industrial and now, a knowledge-based economy, and second, to build unity and cohesion in a fragile, divided society. The great triumph of language planning in Singapore is that it was successful in building a strong economy and society via its deft handling of language issues. But the terms of survival have changed and globalization processes are posing new challenges. How well Singapore meets them will be crucial to how well it masters the challenges of the next four to five decades.

Medium of instruction issues had been a problem for the colonial state since the 1920s. An education policy of benign neglect had spawned a four-medium of instruction school system. English medium education was largely church and state-supported, but Chinese medium schools were supported by either clan or individual philanthropists. Chinese school students, teachers and the community felt discriminated and became receptive to anti-colonial, republican and later, communist influences. The colonial state's response was to promise more aid if these schools came under supervision and taught more English (Gopinathan, 1974). By the end of World War II, the Chinese majority felt that colonial education and language policies were discriminatory, and that English was a colonial language which privileged a small number of collaborators.

Thus what the post-colonial state inherited in the mid fifties was a school system segmented along medium of instruction lines and divisions within ethnic groups, especially the Chinese, and between groups. Policies related to language in education were contested. Coupled with post war economic hardships, the potential for inter-ethnic conflict was large and real. It has taken the state almost five decades to defuse this threat.

There are two major reports of the post-war period to keep in mind. The 1956 *All Party Report on Chinese Education* is a political document as the committee was inter-party and the report was presented to the Legislative Assembly. It addressed the political problem of mobilizing large numbers of the non-English educated to support the emergent post-colonial state. The Report enshrined the principle of 'equality of treatment' for all official languages and committed the post-colonial state to removing discrimination and taking steps like building schools, developing curriculum and training teachers so that this principle could be realised in substance as well as in form. In 1960, the learning of the second language became compulsory at the primary level, and in 1966, at the secondary level. Continual refinements to curriculum time led, in 1987, to English becoming the dominant medium of instruction. Through this report the state sought to enhance the economic and symbolic power of language, to see them as assets not liabilities, and to use language for economic and social cohesion purposes. Language planning in education was intended to grow both human and social capital. English was assigned a modernization role, to assist in Singapore's industrialization strategy, and the mother tongue was to serve as links to culture and tradition and to strengthen ethnic identity. This view of language as assets is vindicated by globalization, which has given a boost to English, and by the economic dynamism of China, which is making Mandarin an increasingly important language. The principle of equality of treatment underpins language planning for education to this day.

The *Report on the Ministry of Education* (1978), by contrast, is an educational document and can be seen as the first major evaluation of the consequences of the bilingual education policy implemented in schools since the 1960s. It signaled the acceptance that policy and practice had produced "an unworkable bilingualism" that was having disastrous consequences for student achievement and for the language and cognitive skills needed for Singapore's economic modernisation.

The policy had assumed a capacity amongst a majority of students to master both languages equally well, what Mcnamara (1966) termed "balanced bilingualism". I think it is fair to say that what troubled Dr Goh and his review team was faltering mastery of English, and the consequences of that for economic growth. It is important to remember that the type of economic modernization Singapore opted for, export-led industrialization, relied on a mastery of English language skills. Policy changed after the Report and language-based streaming was introduced to ensure functional mastery in English by all students. This was accompanied in 1979 with the launch of the Speak Mandarin campaign which sought to decrease the use of dialects and to enhance communication in Chinese via emphasis on Mandarin.

An understanding of this context is vital to recognizing what has been achieved, and what remains as challenges. The major achievement has been linguistic peace, achieved not just by sensible polices but also because economic growth provided opportunities for use of language skills learnt in school. The utilitarian value of English and the state's commitment to providing the widest possible access to English has lead to what Pakir (1992) has termed 'English-knowing' bilingualism, and possibly the highest levels of English language competence in Asia, at least for a broad swathe of the population. The state has also remained faithful to its commitment to provide to mother tongue education; the paradox is that many Singaporeans wish the state was not so insistent on the mastery of the mother tongue!

The other goal of education policy since the '50s, that of strengthening social cohesion, has also been facilitated by widespread access to English and the broadening acceptance and its increased use as a lingua franca. Indeed, while the state continues to link identity formation with mother tongue learning and use, the ever increasing use of English, and its indigenization as in Standard Singapore English points to it becoming a strong marker of a Singaporean identity.

Language Shifts Among Singaporeans
There has been, in line with the broad policy objective, "massive language shifts and phenomenal sociolinguistic realignments" (T'sou, 2002). Literacy rates have arisen overall as have biliteracy rates. The proportion for those 15 years and over who were literate in two or more languages has increased from 45% in 1990 to 56% in 2000. The Chinese ethnic group saw an increase in the use of both English and Mandarin at home, English from 19.6% in 1990 to 23.9% in 2000 and Mandarin from 30% to 45.1% in 2000. The use of dialects dropped from 50.1% in 1990 to 30.7% in 2000. However, when age groups are taken into consideration, it is interesting to note that for the five to fourteen years category, the use of English increased by 9% between 1990-2000, while for Mandarin it appears to have plateaued with a minimal increase of 0.6% over the decade. When level of educational qualifications is taken into consideration, 47.3% of university graduates spoke English at home while 29.5% spoke Mandarin. For diploma holders, 43.3% spoke English while 30.4% spoke Mandarin, while for polytechnic graduates 28.6%

spoke English and 41.4% spoke Mandarin. Given the increased opportunities for training available in English and the further internationalisation of Singapore's economy, the dominance of English as the economic language of choice is likely to be further strengthened. While it is probable that the use of Mandarin in a number of domains, including the home, will decline, the shift to the greater use of English and Mandarin is clear. We must, however, note that the use of English among the different ethnic groups varies, with the Indians using it most. In terms of school success in English, in 2001 at the 'O' levels 87% of Indian students passed, 80% of Chinese and 70% of Malays.

What of language diversity? While it must be noted that promoting Mandarin as the dominant dialect has led to reduction in dialect use, and an elimination of some dialects, it must also be noted that Singapore's success in plugging into the global economic grid, principally via English, has meant we now hear more Thai, Bengali, Tagalog, Bahasa Indonesia, Japanese, etc.

Globalisation and Its Challenges to Education and Language Policies

The pace and intensity of change under globalisation are such that societal level strains have emerged in many countries. Lo Bianco (2001) points to a general destabilisation affecting all advanced societies, a moment of new kinds of hybridity of language and culture, the emergence of multicultural societies everywhere, vast population mobility, ever more diversifying codes of communication and "micro-cultures" of "Internet mediated identity". These global trends are inevitably changing old relationships between language, knowledge, and identity. The huge amounts of information available in English on the Internet and the changing economic landscape in countries like China have given a boost to both English and Chinese as languages of economic opportunity; it is estimated that some 200 million Chinese are learning English. Thus, while Chinese on the mainland are learning English to participate in the global economy, Singaporean Chinese are urged to master Mandarin to avail themselves of economic opportunities in China. Heller (2002), reviewing the progress of the debate and evidence on bilingualism in Canada, notes that globalisation has weakened the power of the nation state to prescribe, prohibit and privilege access to and use of languages among its citizens. The new economy, she asserts, has created new markets for language and in Canada today there is a greater willingness to learn French amongst the dominant English-speaking population. Younger Canadians, she reports, are more prone to seeing language less as a marker of identity and more as a much needed tool for occupational success. In these changing contexts, international and national, we need to ask what it means to be literate.

As the Government is persistently reminding us, we live in new times and must prepare for a turbulent, uncertain future. Globalisation's economic and cultural imperatives, the emergence of new economic centres such as China and India, the telecommunication and life sciences revolutions, among others, call for new economic, socio-cultural and educational strategies.

The combined effects of globalisation, the technological and life sciences

revolution, the large displacements caused by migration, student flows, travel, etc. have created a major upheaval in the social sciences, which is our way of understanding social relations. Globalisation is both a phenomenon to be studied and a discourse; there is quite clearly a post-modern turn in the social sciences and how we view language, language relationships, what learning a language now must mean, have all to be freshly considered. The way the early Singaporean state boxed up language into discrete domains–English for utilitarian purposes, mother tongues for cultural identity, the aggressive elimination of dialects, periodic campaigns against Singlish, the state's allocation of mother tongues, will all have to be revisited. We have to pay more attention to diversity, to see culture as much more diasporic and deterritorialised, and therefore the process of identity formation as much less linear, and inevitably, more contested. This has obvious implications for language learning in our classrooms.

How has educational policy responded to these trends and pressures? There is clear evidence of a paradigm shift. Though we tend to mark 'big bang' reform in education in Singapore from 1997, it can be located further back, to the *Towards Excellence in Schools* (1987) report which provided a rationale for decentralisation in governance of education and which led to the introduction of independent and, later, autonomous schools. The view gains support if we look at the nature of the 1991 and 2001 syllabus for English Language. Cheah (2002) and Lim et al. (1995) trace the evolution of the syllabus, describing the syllabus in the 80s as being more prescriptive and grammar-based, focused on knowing the language, but describing the 1991 and 2001 syllabus as emphasising thinking skills, learning how to learn, being able to use the language flexibly and appropriately in a variety of contexts. The 2001 syllabus has literacy development at the heart of the English language instructional programme with the emphasis on language learning, literacy skills and communication skills. Students were to be taught to be aware of different presentation modes, the varieties of discourse, context and purpose. It is certainly a view of language, and of language learning much more in keeping with the 'new times'.

It can therefore be argued that the 1991 English Language syllabus anticipated the thrust of the 1997 Thinking Schools Learning Nation (TSLN) initiative, but the latter, as a broad based and system-wide reform initiative, lends crucial support to the goals of the syllabus. The TSLN initiative, coupled with the launch of the IT Master Plan, indicated a bold reforming vision for Singapore education, to produce school leavers better able to cope with new economic formations, to use technology confidently and to better navigate cultural diversity. The emphasis was to be placed more on learner initiative and autonomy, to encourage innovation, creativity and critical thinking skills and to cut back on the traditional emphasis on content mastery, on searching for the one right answer; hence, a greater emphasis on problem solving and being able to critique, synthesize and use knowledge.

Critiques of the Place and Role of English
How has the scholarly literature on socio-educational linguistics dealt with the

advent of globalisation? Are we in a period of paradigm shift? I will deal with this at two levels, one the literature and two, changes recommended and ongoing in terms of syllabus and classroom practice. There has certainly developed, at an international level, a literature that sees the spread of English as positive, e.g. David Crystal's *English as a Global Language* (1997). Many others, however, question the dominance of English, the role played by agencies like the British Council, a reliance on native speaker consultants, and the implications English dominance has for the survival and use of indigenous languages. The titles of books such as Phillippson's *Linguistic Imperialism* (1992), Pennycook's *The Cultural Politics of English as an International Language* (1994) and Canagarajah's *Resisting Linguistic Imperialism in English Language Teaching* (1999) quite clearly tell us that the perspectives they are utilising are those of a power and conflict paradigm and their concerns are with ensuring linguistic equality, preservation of indigenous languages and with giving marginalised speakers of other languages fair access to resources. Pennycook's *English and the Discourses of Colonialism* (1998) provides an interesting analysis of the place of English in Singapore in relation to pragmatism, meritocracy and multiracialism. In terms of how such views may result in changed pedagogic practice, scholars like Kumaravadivelu (2003) have criticised syllabus developers and teacher educators for their uncritical acceptance of borrowed methods for English language teaching—here the argument is that differences in language ecology and instructional context are often ignored.

Closer home, there is an interesting body of work on the language planning and teaching situation from a broad range of perspectives, Tan Su Hwi on language planning (1998), Cheah Yin Mee (2002, 1997, 1996), Maha Sripathy (1998) and Parveen Sandhu (2000) on language teaching from a classroom teacher perspective, Glen Toh on textbooks (2003), Benedict Lin on syllabus construction (2003) and Anneliese Kramer-Dahl on teacher training (1997); additionally, there have also been collections of research papers on language, education and society (Gopinathan, Pakir, Ho, & Saravanan, 1998). It is a literature that all language teachers can benefit from. These works raise serious and troubling questions about the purposes of language in our society and teaching in our classrooms. They explore the language learning context in new ways; they explore the implications of policy from the site of instruction, the classroom, and they ask if another in-service course on method or a syllabus revision will 'solve' the problem. It provides a useful corrective to the largely functionalist and assessment-driven views that dominate language in education discussions.

What are we to make of these critiques? A fair verdict would be: 'valuable in parts'. They are beneficial in so far as they force us to consider issues in language teaching, especially English Language teaching, from a variety of perspectives. We need to acknowledge that given the importance of English in social and occupational communication, and the fact that a large number of students do not master English to acceptable levels, we must be more critically aware of our pedagogic strategies and what might work better for these students. But the more ideologically motivated critique of Phillippson and Pennycook has less relevance to the Singapore situation.

English in Singapore is not a minority language spoken by an elite as in Thailand, Indonesia or Vietnam. We need to acknowledge that the state has invested enormous resources to widening access to English since the mid-50s, and given Singapore's need to be economically competitive and the need to have a language to facilitate inter-ethnic communication, the choice of English was inevitable. English is not seen as a privileged language in Singapore, even as we acknowledge that social class, economic opportunity and competence in English are obviously related and that this has implications for both policy and practice. Even though one may have reservations about the policy on dialects, the government cannot be faulted on its commitment to preserve and encourage use of the indigenous languages.

The Challenge for Pedagogy

I think it may be more fruitful to engage at the level of classroom practice. Though the studies I mentioned earlier are to be welcomed, there is need for much more data on what is actually going on in our language classrooms. At the Centre for Research in Pedagogy and Practice (CRPP), an effort at observing, audio and video taping, and analysis of pedagogy across all curricular domains, including English and the mother tongues has begun. I do not want at this point to prejudge what picture we will draw of the English language classroom; at any rate, all of you bear witness to what is happening in your schools. Ingrained practice is hard to change and there are reasons why some practices are hard to change—the influence of assessments, for instance. So while I do accept that some innovation is happening, it is clear to me that we are far from achieving in practice the ideals espoused in the syllabus. Cheah (2002) reported with reference to the 1991 syllabus that teachers were upset at the lack of authoritative direction and anxious about the flexibility they were given. Foley (1998) noted that while the syllabus promoted flexibility and the creative use of language, what he observed was the dominance of textbooks, a lack of genre awareness and the persistence of a narrow range of discourse patterns, both in oral classroom talk as well as in reading and writing. The Minister for Education, Mr. Tharman Shanmugaratnam has echoed the views of many others that Singaporean students need to be much better at communication and persuasion. Anecdotal evidence also suggests that insufficient attention is paid to sustained reading and writing in our language classrooms. Poor implementation then can undermine the good intentions of a progressive syllabus.

The fundamental premise of the 2001 English language syllabus is that Singapore's school leavers must become better *learners*, *creators* and *communicators*. While these qualities will need a fundamental mastery of the English language, equally important will be their capacity to use English flexibly, creatively as a tool, and as a means to communicate effectively. To do that, pupils must see English as invested with power to alter their lives, to extend and shape their dreams, to think with the language. Though accuracy in the use of language is important, it cannot be allowed to dominate our pedagogy. To do this in a situation where English is not the dominant language of students requires teachers to model appropriate language use and learning behaviours themselves and to create open and interactive language

classrooms. Singapore has introduced streaming to accommodate differences in ability and aptitude, but we cannot yet be sure that EM3 and Normal (Technical) students are learning English that is both appropriate and adequate to their needs outside the classroom.

A second major issue is '*cultural literacy*'. It is somewhat paradoxical that we need to stress this in multi-ethnic Singapore, where multiculturalism is proclaimed a pillar of the state, where the very rationale for bilingual education is stated to be, through the mother tongue, to strengthen and enrich cultural roots. We cannot even be sure, though this is the rationale, that this is being done effectively in mother tongue classrooms. Also, in the implementation of this policy we have wandered into the dead-end, culturally speaking, of ethnically segregated classrooms and schools; even our teachers' unions are language based. How are we to square the circle when, with English as the main medium of instruction, we ignore the rich possibilities for cultural learning by insisting that it be learnt as a linguistic tool, for accessing economic not cultural resources? The reality is that English cannot be, and is not being so contained. What we have to do is explicitly acknowledge that in Cheah's (1997) words, classrooms are sites for "*cultural border crossings*", sites for the creating and sharing of culture. A view of curriculum as content has meant that even in history, geography, and social studies, we have taught cultural information factually and neutrally. The English language teacher must use his or her unique position to access these resources for culturally meaningful language learning (Gopinathan, Ho, Saravanan, 2004)

I will close with some observations on teacher preparation. There are a number of strengths in the way English language teachers are prepared in Singapore. There is close synergy between the National Institute of Education and the Curriculum Planning and Development Division (CPDD) on the development of the syllabus and the regular RELC Symposium is evidence of these; often, NIE-based faculty authors are consultants to the language textbooks that are published for teacher use. There is an awareness of the need both to enhance personal competence in English and to equip teachers with the pedagogical content knowledge to teach effectively. Innovation programme components like NIE's Pupil Experience initiative for trainee teachers address some of the issues. We will also have, through CRPP's efforts, a rich and comprehensive picture of our English language classrooms.

Looking ahead, we need to address more urgently the knowledge and skills demands of the new syllabus. We have in place the policy rationales via TSLN and a progressive syllabus. We are all too aware of the limitations of large classes, and the range of linguistic abilities students bring to our classes. We do not yet have a sufficient supply of qualified English graduates coming into teacher education. I do not in truth see many of these limitations changing in the near future.

But our pedagogic practices can and must change. Some teachers have responded to the pressures of language teaching and high stakes of language examinations by opting for reductive and disempowering practices; many others have taken on much more seriously notions of learner centredness, integration,

exposing students to a variety of texts; more attention is being paid to the processes of reading and writing.

We have not done as much as we can to use the language classroom to foster intercultural awareness. We in Singapore have a unique English language learning and use environment. The global requires us as teachers to equip our students with the English language skills to manage exciting, if uncertain, futures. But the national requires that our students acquire greater inter-cultural awareness. This is the next big challenge for our English language classrooms.

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2 Shift Towards Teaching Mathematics and Science in English in Malaysian Schools
Rationale, problems and strategies

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In 1970, the medium of instruction for all subjects taught in Primary One changed from English to Bahasa Malaysia (the national language) while English was taught as a second language. More than three decades later, in a dramatic move the teaching of mathematics and science in Primary One, Secondary One and Lower Six reverted to English as the medium of instruction while the other subjects remained in Bahasa Malaysia. This change in language policy is perhaps unprecedented and the paper critically examines its rationale, implications, problems and implementation strategies. In the initial stage, various opinions were expressed with regards to the policy change with some groups opposing the idea while others suggested alternatives. Among the pedagogical strategies proposed is the use of information and communication technology (ICT) to support the teaching of these subjects in English. Initial findings on implementation of the policy indicate that teachers and students are less apprehensive and are making good progress.

The Proposed Change

In 1970, the Ministry of Education Malaysia announced that all students entering Year 1 in National Primary Schools would be taught science, mathematics, local studies and moral education in Bahasa Malaysia. Previous to that, English was the medium of instruction. However, National Type Chinese and National Type Tamil Primary Schools continued to use Mandarin and Tamil as the medium of instruction respectively for all subjects with Bahasa Malaysia as a compulsory subject. In all the three types of primary schools English was taught as a second language. In 1976, all subjects (geography, history, science, mathematics, commerce and moral education) were taught in Bahasa Malaysia in all Year I Secondary Schools while English continued as a second language (The main motive for the change in the medium of instruction was to make Bahasa Malaysia as the language that will help unite the various ethnic groups in the country as it was and continues to be the

most widely spoken language in the country (Ministry of Education, 1976). There can be no doubt that using Bahasa Malaysia as the medium of instruction in schools has served the National Education Policy well by strengthening the position of Bahasa Malaysia as the national language of the country and streamlining it with the provisions of the Federal Constitution. These schools also complemented the objectives of the New Economic Policy (NEP) by successfully enhancing national integration, a mammoth task in a plural society. Bahasa Malaysia as the medium of instruction was introduced at a time when the entire nation was recovering from the 1969 tragedy. Economic restructuring, eradication of poverty, national solidarity and social stability were uppermost in the minds of the nation's leaders and Bahasa Malaysia-medium schools served as the tool of national unity.

Now, more than three decades later, the idea of bringing back the so-called 'English School' was mooted in early 2003 in an effort to usher Malaysians into the global economy and the evolution of the knowledge society which widely used English. It was becoming evident that the command of English was deteriorating especially among Malaysians, and the country could ill-afford to allow the slide to continue. The idea drew intense protests from various groups and individuals amidst fears that it would threaten the position of Malay as the national language, that it would disadvantage rural students and lead to the erosion of culture and identity of the various communities. Taking into consideration the vehement outburst of various quarters and realising that it was politically prudent, only science and mathematics would be taught in English in 2003 in Year 1 primary school, Year 1 secondary school and Lower Six (Pre-University). The then Prime Minister, Tun Dr. Mahathir Mohamed arguing for the rather drastic decision said,

> We are committed to teaching science and mathematics in English. It is not political. It is not intended to undermine the culture or the identity of the different communities in Malaysia. It is simply because we have to acknowledge that English is the language of learning today. In the past, it was Arabic or even Latin; now it is English. We have to accept it, whether we like it or not. The fact is that most of the work in science and mathematics is being done in English and they can't keep on translating books. It is just not possible to translate journals which come by the thousands every month. (*The Star*, 14 October, 2002)

According to the Director of the Curriculum Development Centre, the government's decision to introduce English as the medium of instruction in teaching and learning science and mathematics would enable students to keep abreast of developments in science and technology by enhancing their ability to tap the vast resources in science written in the English language. It will also provide opportunities for students to use and enhance their proficiency in the language (Ministry of Education, 2002).

The Great English Debate

■ **Opposing the shift**

The announcement led to a great debate involving different groups of people and individuals with different perspectives, interests and agendas. The newspapers and the internet became avenues in which Malaysians expressed their opinions about the issue. The most vociferous critics were Chinese educationists. They argued that;

> ...the plan will seriously dilute the cultural identity of the Chinese community and eventually phase out mother-tongue teaching and lower standards, though Chinese primary school students consistently score better in maths and science than their counterparts taught in Malay. (Dr Yap Sin Tian, Vice President of Dong Jiao Zhong, *The Star*, 17 July, 2002)

Political parties joined in the foray questioning the rationale for the move in National Type Chinese Schools. Statistics were provided to show that students using Mandarin as the medium of instruction had scored higher in science and mathematics compared to students taught in Bahasa Malaysia or Tamil.

> The proposal to use English to teach mathematics and science is most inappropriate for Chinese primary schools in view of the consistently higher standards in these subjects in Chinese primary schools as compared to the other medium streams, including English primary schools before they were abolished in the mid-Seventies. The Education Minister should release studies in Malaysia or other countries which state that teaching mathematics and science in English from Std. One in primary schools is more effective than in Bahasa Malaysia or the mother-tongues and name the countries which use English to teach these two subjects from Std One. If the objective of the move is to enhance English proficiency, it is a most ridiculous proposal as the amount of English used in these two subjects are very limited. (Democratic Action Party, *New Straits Times*, 21 August, 2002)

Another common criticism is that the proposal is elitist because the majority of Malaysians will not be able to handle the change as their proficiency in English is poor.

> The problem is that it's OK for the urban class, but for the many people in the villages it will be chaos," she said. "If English is the problem, why drag maths and science into it? (KeAdilan Party, *New Straits Times*, 22 August, 2002)

Another political party, the Pan Islamic Party (PAS) hinted that state-run religious schools which it controlled would not follow the move to introduce the teaching of mathematics and science in English because the use of English would disadvantage bumiputeras in the interior. Some non-governmental organisations (NGOs) drew international comparisons to support their view that it was not necessary to make the switch to English. For example;

> Japan has a substantial presence in the automobile, electronics and optical

industries in the United States market, as well as in Europe and all other parts of the globe. It gained this benefit not from abandoning the Japanese language, but by learning the language of its intended customers. (*Islam Online*, June, 2002)

While the current debate on English proficiency is understandable, a country need not necessarily place English as the language of technology. Look at the European countries like Germany and Sweden which produce cars like Volkswagen and Volvo. They did not achieve this by mastering the English language. (Zainal Borhan, Federation of Malaysian Writers' Association of Malaysia—Gapena, *The Star*, 12 July, 2002)

Some educationists were convinced that science and mathematics are best taught in the mother-tongue of the learner especially in the early years.

I think these two subjects should be taught in the students' "first language" in primary schools. By "first language" I mean the medium of instruction of the primary school concerned (please note that I am not using the term "mother tongue" for I think it is a misnomer in many situations in the Malaysian school system). At the primary level, most students would find it difficult to learn abstract concepts in a language that they are not familiar with. It is extremely important that the children get a good understanding of the basic mathematical and scientific concepts that are taught in primary schools because of the hierarchical structure of the subject matter. If a student does not have a good foundation in Science and Mathematics at the primary level, he or she will encounter greater difficulty in learning these subjects at the higher level. In line with this argument, I do not think that Science and Mathematics should be taught fully in English in all the primary schools, be they SKs, SRKs, or SRJKs. (Molly Lee, science educator, 12, May, 2002)

The use of a pupil's mother tongue is the most effective and direct way for a pupil of any race to acquire knowledge and to reason. A new concept or a new idea could be better understood by a pupil in his or her own mother tongue. This is because when people are faced with a complex idea, they naturally try to think about it in their mother tongue. English is a comparatively difficult language and in trying to use English to learn Science and Mathematics at the elementary level, pupils may run into problems arising from the use of the language. (Ungku Aziz, Royal Professor, 18 May, 2002)

■ **Supporting the shift**
While there were those who opposed the shift, there were individuals and organisations supporting the move and they included political parties, professional bodies and trade union organisations.

As English is the lingua franca in technical and research documents internationally, it is vital for our future engineers and other scientists to know the language to understand the material. This would ensure that our scientists and engineers are

on par with others internationally and are able to compete globally. (Dr. Gue See Sew, Institute of Engineers Malaysia, *The Star*, 23 August, 2002)

There is no need for any discomfiture, discomfort or dissatisfaction within any community or group that the position of Bahasa Malaysia as the national language could be threatened by the revival of English-medium education, which is merely a means to acquire knowledge and skills, and not an end in itself. Most text books, journals, research materials and instruction manuals are published in English worldwide, and translating them to Bahasa Malaysia will take years, if not decades. Without adequate English language proficiency, our workers will be left behind in the "technology rat race". (Zainal Rampak, Malaysian Trade Union Congress, *Business Times*, 23 May, 2002)

The teaching of science and mathematics in English should be carried out simultaneously for all primary students (including vernacular schools) from standard one to six beginning next year to improve their proficiency in the language. It should also cover students in secondary school except examination classes. (Zaleha Ismail, President, National Council of Women's Organisation (NCWO), *New Straits Tines*, 2 October, 2003)

Reacting strongly to opponents of the proposal and in particular the Chinese educationists, a high ranking government politician said;

The Chinese in China were immersing themselves in English through special programmes while in Singapore and English is the main means of communication and it did meet with protests although most of its population are of Chinese descent. (Muhyiddin Yassin, UMNO Vice-President, *Malaysian General News*, 12 August, 2002)

■ **Alternative models and approaches proposed**

Besides opposing outright or supporting the teaching of mathematics and science in English, some individuals and organizations suggested alternative models and approaches. For example, Chinese educationists suggested that the primary schools should maintain their present status with regards to the language shift. Instead the teaching of mathematics and science in English should begin in Year 1 secondary school. This would assuage Chinese and Tamil medium schools because all secondary schools use Bahasa Malaysia as the medium of instruction except the independent Chinese schools. Others suggested that the English language curriculum include,

..... science and mathematics content within teaching texts and materials, as sub-topics. For example, classroom comprehension on Geometry and Human Biology sub-topics learnt in English, could be tested with questions posed and answered in English, therefore progressively eliminating the students' aversion to referring to educational materials in English. The Government should also look into reviewing the current standards of English teaching methodology and

materials, to ensure more effective delivery in the teaching of English. (Members of the Young Professionals Chamber of Malaysia—PROMUDA, July, 2002)

A well-known educationist proposed that,

...making it compulsory to pass English was a better way of improving standards. The present policy that students need not pass the subject was a definite setback. With such a ruling, there is no motivation for students to master the language. (Awang Had Salleh, Professor of Education, *New Straits Times*, 14 May, 2002)

A science educator who was not supportive of the two subjects taught in English at Primary 1 said,

I support the idea that the students be exposed to English terminologies in Science and Mathematics at Year Four and to selected bilingual text at Years Five and Six for this would help them to make the transition to learning Science and Mathematics in English at the secondary level. (Molly Lee, science educator, *New Straits Times*, 23 August, 2002)

One of the ways to improve English teaching is the re-introduction of classical literature in schools. "What happened to books like David Copperfield, Adventures of Tom Sawyer and Huckleberry Finn. We don't hear of them anymore. It's time to bring them back to our schools and the students' command of the language will definitely improve. After all, at one time, we were better in English than many other nations because we studied English literature. But please, don't disturb the teaching of Science and Maths. (M. Manogar, pro tem president of the Kuala Lumpur-based Malaysian Tamil Educational Research and Development Foundation—MTERDF, 2002)

Implementation

■   Timeline

In January, 2003, science and mathematics were taught in the English language in Year 1 Primary, Year 1 Secondary and Lower Six (Pre-University) in all Malaysian schools. In National Primary Schools (5655 schools with 2,365,485 students), 7 periods per week were allotted for mathematics and three periods for science, all taught in English. Despite protests and even demonstrations, it was agreed at the eleventh hour that for National Type Tamil Primary Schools (528 schools with 92,699 students), the two subjects would be taught in English in Year 1 with time allocations similar to the National Type Schools. However, in the National Type Chinese Primary Schools (1287 schools with 636,783 students), science and mathematics were taught in Mandarin and English. In a week, 10 periods were allotted for the teaching of mathematics of which six was in Mandarin and four in English. As for science, 6 periods were allotted with three each taught in Mandarin and English. Under the proposed system, the number of periods for other subjects in these schools is to be reduced to allow for the teaching of the two subjects in

English in the timetable, in addition to classes conducted in Mandarin. Lower Six students were required to switch to English as the medium of instruction with immediate effect despite the fact that they had been taught mathematics and science (i.e. biology, chemistry and physics, general science, modern mathematics and additional mathematics) in Bahasa Malaysia for the past eleven years.

While there was a strong move to begin teaching science and mathematics in English in only Primary One, it was agued that the nation could not afford to wait for eleven years before its first cohort of high school students graduate while the stockpile of material in science and technology written in English increases rapidly. To speed up the process of using English for teaching these two subjects, the strategy adopted was to make the language shift at three different levels in parallel. In 2005, science and mathematics will be examined in English for the first time in the Lower Secondary Assessment (PMR), a nation-wide examination held at the end of three years in secondary school (see Table 1 on page 18). It was interesting to note that for the first time, the 2003 examination paper for mathematics and science was printed in both Bahasa Malaysia and English, in preparation for the future. In 2006, when students are streamed into the science or arts stream in Secondary 4, biology, chemistry, physics, engineering and mathematics will be taught in English. In the meantime, science stream students entering the 17 local public universities in 2005 will follow courses in medicine, engineering, ICT, science, architecture and so forth completely in English, though there will be compulsory university courses conducted in Bahasa Malaysia.

■ Training of teachers

The majority of science and mathematics teachers in both primary and secondary schools have been teaching the two subjects in Bahasa Malaysia for more than three decades. It is estimated that teachers born after 1963 or those 40 years and below would have had their primary and secondary education in Bahasa Malaysia and learnt English as a second language. In addition, the professional training of these teachers, whether it be in universities or in teaching training colleges, would have been largely conducted in Bahasa Malaysia. For those teachers above forty, decades of teaching mathematics and science in Bahasa Malaysia have left some quite inadequate to teach the two subjects in English.

The Teacher Training Division of the Ministry of Education Malaysia set up ETeMS or English for the Teaching of Mathematics and Science unit as an urgent interim measure to train teachers of mathematics and science to use English as the medium of instruction (ETeMs, Ministry of Education Malaysia, 2002). The ETeMS unit acknowledges that because of time limitation it does not claim to provide a complete language development course, but rather, one of several support mechanisms introduced by the Ministry of Education in assisting teachers enhance their English language competence to a level that will enable them to use the language in and outside the classroom. The programme designed by ETeMS assumes the following:

● Teachers undergoing the training programme already possess content area knowledge and the pedagogical skills relevant to the subject;

Table 1	Timeline for implementation of teaching mathematics and science in English in Malaysian schools	

Year	Taught in English	Implication
2003	Year 1 Primary School Year 1 Secondary School Lower Six Pre-University	Training of teachers, textbooks and courseware in English
2004	Year 2 Primary School Year 2 Secondary School Upper Six Pre-University	
2005	Year 3 Primary School Year 3 Secondary School	Lower Secondary Assessment (PMR)—Public examination
	Year 1 University — Medicine, Engineering, Science, Architecture, Information & Communication Technology	Need for university teachers proficient to conduct lectures, tutorials, practicals, seminars, fieldtrips, etc. in English
2006	Year 4 Primary School Year 4 Secondary School	Mathematics and science in English Science stream (mathematics, biology, chemistry, physics, engineering drawing, etc in English) Arts stream (mathematics and general science in English)
	Lower Six and Upper Six Year 2 University — Medicine, Engineering, Science, Architecture, Information & Communication Technology	Biology, Chemistry, Physics and Mathematics in English Lectures, tutorials, practicals, seminars, fieldtrips, etc. conducted in English
2007	Year 5 Primary School Year 5 Secondary School	Mathematics and science in English SPM—Nation-wide public examination for mathematics, biology, chemistry, physics, engineering drawing, general science in English
	Lower Six and Upper Six Pre-University Year 3 University	Biology, Chemistry, Physics and Mathematics in English
	Science and Technology-based courses	Science and technology-based courses in university taught in English

● Teachers have a basic level of English language proficiency acquired through instruction received in their primary and secondary schooling.

Drawing on the existing competencies of participants, ETeMS adopted a three-pronged approach in its staff development efforts:

(1) *Language for accessing information*

This component aims to enhance the information seeking skills of teachers,

especially in searching for science and mathematics materials relating to content area topics, curricular materials such as syllabuses and handbooks, and texts dealing with methodological issues. It must be emphasised that the aim is to develop the language skills needed for accessing information in texts and not to provide instruction in the content of the subject. It is hoped that teachers will be motivated to access materials available on the web relating to content of the two subjects and relevant pedagogical strategies that will impact classroom teaching and learning.

(2) *Language for teaching mathematics and science*

This component provides opportunities for teachers to sharpen their language skills for teaching the two subjects. Modules were developed which focussed on text-processing skills, vocabulary development (Bahasa Malaysia and English terminology in science and mathematics), grammar, and oral presentations such as explaining concepts in English.

(3) *Language for professional exchange*

As professionals, mathematics and science teachers would conceivably wish to communicate with their peers in English. A small component of the programme was devoted to helping teachers towards this direction.

The ETeMS training programme involved 240 hours of face-to-face instruction supported by a "buddy system" whereby the teachers could get further help from identified resource persons in their locality. To date, a total of 33,387 mathematics and science teachers have been trained.

■ Technology support for the teaching of mathematics and science in English

Technology has been touted as one of the methods to facilitate the teaching of mathematics and science in English and used to allay the fears of people in regard to the hurried implementation of the programme. As an immediate measure, the Curriculum Development Centre in collaboration with some courseware companies developed a set of courseware for teaching the two subjects. These were made available together with LCD projectors to about 10,000 primary and secondary schools. Initial observations of actual classroom practice found that students were most excited with projection of materials using the LCD. After the first few months, the novelty effect waned and teachers who were not proficient in English tended to rely too heavily on the courseware leading to boredom among students (Hazilah, 2003). However, there is evidence to indicate that some teachers are not using the courseware because they felt that it slowed down teaching sessions leading to insufficient time to complete the syllabus within the allotted time (Sharifah, 2004).

The teaching of mathematics and science in English has opened opportunities for using the vast resources of the internet in the classroom. In her study of using a website and various internet tools such as e-mail and the bulletin board to teach Year 1 Secondary Science, Hazilah (2003) found that students enjoyed learning the topic *The World of Cell*. Learners found the interactive activities interesting and challenging and those who have difficulty with terminology in English were

supported with an online English-Bahasa Malaysia glossary. The e-community developed by the researcher encouraged students to share ideas and interact with each other in English, which they would be rather apprehensive to do in the classroom. Similarly, Low (2004) developed and evaluated a web-based lesson on *Introduction to Energy* for Year 1 Secondary Science in English. Incorporated in the lesson were hyperlinks to relevant sites on the topic, online quizzes and animations. Generally, students' feedback was positive with the majority enjoying what they did and some remarked that they did not realise the abundance of material related to their school work. Apparently, the potential of technology enhancing teaching is boundless depending on the ingenuity of teachers and available infrastructure.

The Curriculum Development Centre has attempted to provide a list of relevant hyperlinks on its website for the teaching of different topics in mathematics and science, such as online quizzes, lesson plans, worksheets, and activities. These resources would have been ignored had it not been for the switch towards English. As more schools have internet access, web resources will become more relevant in enhancing teaching and learning.

Conclusion

Few will deny that that the overall standard of spoken and written English has deteriorated over the years, especially among the young. One drastic move was to reintroduce 'English schools', but it met with strong opposition from many quarters of the population and was thus shelved. Instead, it was proposed that only mathematics and science be taught in English. This too met with opposition, but the government decided to go ahead with the plan citing the urgent need to enhance the English proficiency of future Malaysians to compete in the global economy, where English is the main mode of communication and store of knowledge. A three-pronged parallel approach was adopted in making the switch from Bahasa Malaysia to English for mathematics and science, since it would take too long if English was introduced in Primary One only.

Universities will be accepting the first batch of students in 2005 who were taught mathematics and science-based subjects in English. Are these institutions prepared? Are university teachers adept in lecturing, conducting seminars, practicals and fieldwork in English? Similar to school teachers, university teachers below the age of forty will have had their schooling in Bahasa Malaysia and except for those who pursued masters and doctoral degree in Britain, Australia or the United States, the rest are most likely to be not proficient in English. It is the government's aim to produce university graduates who are proficient in English and universities should accordingly prepare their teachers and provide the necessary facilities in meeting the challenge even if it means academic staff attending English language classes.

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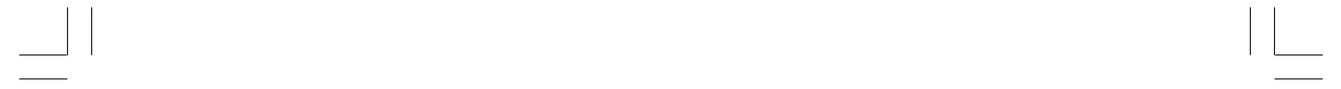
3 Reflective Practice for Language Teachers in Asia

A real paradigm shift

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A paradigm generally refers to a pattern of some kind. When a paradigm shift takes place, the usual patterns we see in our lives change and this can be disconcerting but hopefully we can begin to see from a different perspective. Reflective practice involves language teachers making a real paradigm shift from the usual method of others telling them what to do in their classroom; reflective practice involves teachers taking responsibility for their own actions in their classroom. In this paper I will look at what reflective teaching is, why it is important and how language teachers can reflect on their teaching.

Paradigms and Reflective Practice

The term "paradigm" is another word for pattern. Pattern forming is part of the way we attempt to make meaning from our experiences (Ausubel, 1968). We use these patterns to understand situations, raise questions, build links, and generate predictions. In the field of education, since the early 1980s, the term "paradigm shift" has been used as a means of thinking about change in education. When a paradigm shift takes place, we see things from a different perspective as we focus on different aspects of the phenomena in our lives (Jacobs and Farrell, 2003). Under the "old" paradigm, so-called experts have told language teachers how they should teach their classes. Within the "old paradigm" language teaches have been prescribed teaching methods (e.g., audio-lingual, Berlitz method) and textbook materials and then told how to teach in the "correct" ways in their classrooms. Within TESOL one of the most prominent and powerful approaches to language teaching has been to use research developed and supported by experimentation by the experts, the so-called science/research conception of language teaching. In fact, Freeman (1989) has suggested that TESOL has been overly influenced by "different disciplines competing for control: Applied Linguistics, Methodology, SLA, while overlooking the core, teaching" (p. 5). In the previous paradigm, second language teachers' opinions and experiences were usually ignored. However, in the "new" paradigm, teachers play a central role in directing their own professional

development, and this can be accomplished through reflecting on practice with peer teachers.

Reflective practice as a concept has been viewed in the form of three 'paradigms': *technical rationality*, *conceptual* and *critical*, each defining different values (adapted from Ecclestone, 1996). Reflection at the level of technical rationality is where teachers focus on behavior and skills within the classroom without looking at where these originated. Language teachers reflect on their teaching activities and skills and only focus on their immediate behaviors while teaching with the idea of finding a "correct" method. Administrators usually encourage this level of reflection because it suggests that they can retain control of the overall education process. Reflection at a contextual level, a second paradigm, is where language teachers begin to examine the theory behind their classroom practices. Teachers may then consider alternative practices to achieve the same aims (depending on their students needs). Again, though, the locus of power remains with the education administrators.

However, reflection at the critical level (often called dialectical reflection) calls for a real paradigm shift because it is where teachers focus on the moral, ethical or socio-political issues associated with their practice. This level of reflection includes an examination of the various roles teachers, students, and parents, and most importantly, school administrators play in setting up classrooms and schools within a society. In TESOL, Bartlett (1990) says that in order for language teachers to become critically reflective, they have to "transcend the technicalities of teaching and think beyond the need to improve our instructional techniques" (p. 204). He sees critical reflection as "locating teaching in its broader social and cultural context" (p. 204). Thus, language teachers who reflect at this dialectical level are really seeking self-understanding in a wider context of classroom, school and community.

This paper argues that rather than viewing reflective practice as fractured process where three paradigms are competing with each other, we need to re-establish reflective practice as an integrated concept where language teachers can reflect on different levels at the same time depending on the topic of reflection. This paper offers such a model of reflective practice for language teachers which is common to all three current 'paradigms' of reflective practice.

Reflective practice, therefore, involves language teachers making a real paradigm shift from the usual method of others telling them what to do in their classroom; in this new paradigm, reflective practice involves teachers examining their beliefs and classroom practices about language teaching and learning, thus taking responsibility for their own actions in their classroom. In this paper I will look at *what* reflective teaching is, *why* it is important and *how* language teachers can reflect on their teaching.

What is Reflection?

In a review of the education literature on reflective teaching, one discovers that there is much variance in the definition of reflection to the point that reflective practice has lost some of its sharpness. Actually, I do not see this as such a bad

development because it means the so-called experts cannot tell you, the practicing language teacher, what reflection is. I propose that reflective practice occurs when a teacher seeks answers to the following questions (Farrell, 2004a):

● What is he/she doing in the classroom (*method*)?
● Why is he/she doing this (*reason*)?
● What is the *result*?
● Will he/she change anything based on the information gathered from answering the first two questions (*justification*)?

Here teachers look at what they are doing in their classes at present. Next they seek reasons for the approach they are using and what the result of using this approach is in terms of its impact on student learning. After this they must justify continuing this approach or make changes to start another cycle of reflection by looking at the method they are using, either changed or the same as before. This can be schematically represented as follows:

Method ——▶ Reason ——▶ Result ——▶ Justification ——▶ **Method**
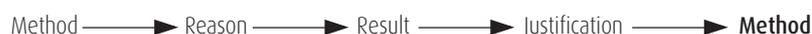
Additionally, I see two key components present in reflective teaching that are not in ordinary reflections that teachers routinely make every day: (1) teachers collect data about their teaching, and (2) the teachers use the information from the data to direct future teaching decisions. This is different than the usual informal reflections that many teachers make during and after their classes. For example, language teachers can collect the following data from classroom transcripts (see Farrell, 2004b for a full discussion of each of these):

● Underlying Communication Structure
● Classroom Interaction Patterns
● Academic Task Structure—the sequencing of tasks and activities
● Social Participation Structure—checking the speaking rights of classroom participants
● Communication patterns and language used in groups and project work
● Teacher's question types

Once language teachers have collected and analyzed this classroom communication data, they can then use the information to make informed decisions about their teaching. The main point here is that language teachers must first be aware of what they are doing in their classrooms before they can change anything. Yes, experienced teachers have their many years of teaching experience and many are already firmly set (and are very comfortable) in their own ways of teaching. However, as Fanselow (1992) has pointed out, these experienced teachers are often unaware of their actual teaching routines and beliefs. Worse, they may not actually be doing what they think they are doing in the classroom.

Why Reflect?

Why should teachers bother to reflect on their work? Many teachers are already overburdened with so many demands on their time outside of the classroom that they really have no room to entertain the idea of reflecting on their teaching. In

many education programs today there seem to be growing demands on teachers to standardize these programs so that students will be able to pass standardized tests. Consequently, some teachers have experienced feelings of alienation and isolation because they have been asked to implement program changes they have had no part in shaping. In fact, language teachers may see themselves as mere technicians executing programs that have been prepackaged and prescribed by others.

Though this picture I paint may seem dire, language teachers really can influence their practices much more that they think by proactively taking more control of their working lives. As such, they become more empowered decision makers, engaging in systematic reflections of their work by thinking, writing, and talking about their teaching; observing the acts of their own and others' teaching; and by gauging the impact of their teaching on their students' learning. In these ways, teachers can begin to locate themselves within their profession and start to take more responsibility for shaping their practice.

How can Teachers Reflect?—A Model of Reflective Practice

The model of reflective practice (from Farrell, 2004a) presented here has five core components. The five components are:
- Provide different opportunities for teachers to reflect
- Build in some ground rules
- Make provisions for time
- Provide external input
- Provide for low affective states

The five core elements are not isolated but are all connected: One builds on the other and all need to be considered as a whole. A range of activities should be provided for teachers to reflect on their work, three of which are journal writing, classroom observations and group discussions. A teaching journal can be a place for teachers to experiment, criticize, doubt, express frustration and joy, and raise questions. Classroom observations should be nonjudgmental descriptions of classroom events that can be analyzed and given interpretation. Another activity that teachers can use to reflect is group discussions—talking to other teachers. Of course, pairs of teachers can team up to discuss teaching in the form of critical friendships. A set of rules or guidelines should also be built into each activity in order to focus on the reflections. Also, for practicing teachers to be able to reflect on their work, time is a very important consideration. Therefore, the group at the start of the process should negotiate a certain level of commitment by individual participants in terms of time availability. There is also a need for comparing the findings of the group reflective experiences to other peoples' observations and reflection and from other peoples' experiments, and from theories learned from research and the literature—external input. Finally, a non-threatening environment should be encouraged in the reflective process as a whole.

Getting Started with Reflection

There are many activities that language teachers can undertake when examining their practice. Teachers can look both inside their own classrooms, and/or other teacher's classrooms and can also look outside the classroom and school to see what influences their practice. The following activity is designed to get you started on your reflective journey (from Farrell, 2004a).

How Routine Are You in Your Teaching?

- Are you aware of any routines in your teaching?
- Do you start your classes the same way each day?
- Do you end your classes the same way each day?
- Do you go through the textbook page by page? If not, what do you do with the prescribed textbooks you must use?
- Do you stand or sit in the same place each class?
- Do you call on the same students to answer questions?
- Do you keep the same materials year after year and continuously use them in your classes?
- When was the last time you actively looked for new materials for your classes?
- When was the last time you stopped for a moment and questioned why you were doing what you were doing in the classroom (regarding both methods and materials)?

Conclusion

Language teachers should not be afraid to look at themselves as teachers. However, it is with this last point that I offer a word of caution: reflection can be a complex process, and cannot be achieved by being reflective one day and not the next. In order to become truly reflective practitioners, language teachers must consistently reflect on their teaching: look at what they do, how they do it, and why they do it.

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4 Analog to Digital

Technology shift with classroom implications

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Prosperous regions of East Asia have been at the forefront of technological advances. In the past few years, we have been witnessing a massive shift from analog to digital technologies. In the classroom this shift is seen in the form of tape recorders being replaced by CD players for audio, and videotape players being replaced by DVD players for video. A primary difference with these digital technologies is their interface with computers.

This shift to digital is having profound effects on the lives of both students and teachers. Students are already leading the way in adapting the new toys to their own needs, whether sharing music files or sharing photos taken on their cell phones. Schools are adopting e-learning and distance education. Teachers, too, need to keep up as digital technology permits the editing, repackaging, and wider dissemination of our previous teaching material, in particular audio and visual media, by means of the computer.

In this paper, I will first look at just what the advantages and disadvantages of both analog and digital media are, covering both audio and video capture and playback, and also present some of their practical applications in the ELT classroom. Then I will address the implications of using these new tools on current and future classrooms.

In November 2003, about halfway through an 18-week semester, I gave my tertiary level Advanced Listening class their outside term project assignment. As in past years, I gave each of 21 students a videotape containing either a 50-minute lecture or a documentary, the topic area chosen to roughly match each student's major. Students were required to write an outline, a one-page summary, a critique, and a word-by-word transcription of a five-minute portion of the video to be checked individually with the teacher before final submission. Students seemed to understand what was required of them, and they knew they could watch their videotapes in either of two self-access labs on the campus. But then about two weeks later a few students came requesting that I give them their videos in VCD or DVD format instead. One said, "I took the videotape home on the weekend, but my parents threw out the video player and only have a DVD player now." At that point I was not equipped to convert their videotapes, but I welcomed them to convert their own if they could—and several did. In the end each student was able to

complete the assignment, but I was troubled. I had thought I was a tech-savvy teacher, but once again the students were ahead of me. When I teach the course again beginning in September 2004, I will have nearly all materials available in a digital format.

Meanwhile, I started thinking more about just what was happening. It seems to be the case that in Taiwan analog entertainment technologies are nearly obsolete. A few months ago I tried to buy a new videotape player. Several shops I visited had none at all, and those that had one had only one—and it had no counter. It is the same case with tape players/recorders. What does that mean for teachers and classrooms, both of which seem to be located now somewhere between analog and digital? What are we losing as we abandon analog; what are we gaining when we adopt digital? As we stand in this border region, it seems to be an appropriate time to analyze these two different types of technologies in terms of their usefulness for preparing teaching materials and for classroom teaching. We look first at audio, moving then to visual images, still and moving (video). In the final portion, we look at the classroom implications of this shift.

Audio Technologies: Analog

These days, when we are bombarded by the music of radios and MP3 players and the musical ringing of cell phones in public places everywhere, it is difficult to imagine how language teaching proceeded before the invention of the audiotape player (see Winston, 1998, for the historical development of recording devices), yet somehow people still managed to learn foreign languages successfully. Tape recorders and players facilitated the invention of the language laboratory, which was essentially a wired combination of playback and recording devices combined with headphones to keep each student's learning private and isolated. A language lab—or just one reel-to-reel tape player—went hand in hand with the audio-lingual method. Listen and repeat, often quite mechanically. This was the expected teaching method when I was doing my student teaching back in the 1970s.

Teaching methods evolved, but the tape recorder remained because it was still able to bring native speakers into the classroom. Meanwhile, the cassette recorder was invented, making tape players ever more lightweight and, hence, far more portable and affordable. Young people carried their music with them in large boom boxes, much to the distress of their elders. And teachers carried their language lessons around to their classrooms as course books soon came with audio cassettes.

The past decade has introduced another revolution in sound devices for us—digital audio. Digital promises to be better and it is for the most part, but like many teachers, I am used to the older technologies, and sometimes what I want to do as a teacher is not what the manufacturer of a device had in mind.

Have you ever met an EFL teacher in recent years who was afraid of using a tape recorder? Probably not. Even the teacher who has technophobia can usually handle this device, can go into a class and play the cassette that goes with the lesson. S/he may not always find the right starting place but s/he somehow manages. The functions are straightforward and playback is easy. You can preset the place where

you want to start ahead of going to class, then just turn it on and play it. If you are fortunate enough to have a machine with a counter, you can find the right places on the tape on that machine, but counters are not consistent across machines, so you can still have trouble finding your material on different machines. However, if we are using material on different parts of the tape, it does take time to run forward and backward in class to locate the starting points. For language teaching, we may want to repeat small portions, such as an individual sentence, a number of times, and this is fairly easy to do even without a counter, though the ideal starting point may not be exact.

Few if any audiotapes have copyright protection devices, so students as well as teachers copied tapes freely. Especially when preparing tests, it was often easier to put all the stimulus questions on one tape in the proper order than to key up several tapes ahead of time. The double-deck tape player and recorder was useful for copying and editing. How many of us indeed patched together our own listening tests, and we may even have used the built-in microphone to add the directions and question numbers in our own voice. The result, however, was not at all professional. The volume may have differed between our own vocal output to that of the questions copied from other tapes. In editing, the starting and stopping points were not always exact. Moreover, with analog, each time we copy from one tape to another, we tend to lose about 10% of clarity with each successive recording. Thus if your starting point is a copy from someone else's original, and then you make a copy from your copy, the result is at best perhaps 80% as good as the original. In most cases if we were starting from a clear audio tape made for ELT, then a second or even third copy would probably be fine for classroom use.

There was one more sneaky little problem that came with recordings you copied and edited as well as with legitimate recordings you may have made, such as language data you recorded: the tape played perfectly well on the machine it was recorded on, but when you played it back on the school's tape player, it was too soft or you could not hear it at all. The place it was most likely not to play was in the language lab! Why? First of all, individual tape players differ as to their settings for record and for playback; this inconsistency causes problems with playback volume. Notice that when you used commercially produced tapes you did not encounter this problem. The second problem may occur between portable players and is definitely a consideration when using language lab playback: the difference in the channel of recording and the channel of playback. Language labs typically allow students to both listen to a tape and to record their own voice on it; in order to do this, one track is used for play and the other for record. Thus, for example, if your tape recorder uses only the left track to record, but the language lab uses the right track for playback, then when you play your tape in the lab, you and the students will hear nothing. Portable tape players generally do not separate the tracks by function (note that any recording erases the previous) so you will usually get either full sound or at least partial sound from your self-made recording played on any other portable player. To sum up, it was easy to copy and edit on analog tape recorders, but the result was rough and playback on different equipment could be problematic.

Audio Technologies: Digital

In the 1980s, a new way to listen to music began to spread—the compact disc. Ordinary people started buying the new software—the CDs, and hardware—the CD player, replacing initially the earlier vinyl records and turntables. The tape recorder was not threatened at that time because it could record and hence manipulate music, while records and CDs had to be played as they came. Meanwhile, back in the language lab, the downfall of the audio cassette was imminent. Some tapes might be 15–20 years old and had deteriorated. A combination of old hardware and software meant that tapes more often got stuck in tape players or tore. Suddenly CDs looked like a more permanent storage option. Moreover, they seemed less likely to suffer damage in a faulty machine, although they could still be scratched.

Producers of ELT materials saw the potential. Tapes that came with textbooks did not provide any interactivity; students just listened to them as they came. Therefore, there was no pedagogical reason preventing a CD option. At first textbook companies offered both tapes and CDs because not all customers had CD players. Now in Taiwan, for example, it is nearly impossible to find accompanying tapes for newly-produced textbooks, just CDs.

CD players quickly became portable; at first they often came with tape player in one portable unit. Teachers could take these to class and use either older or newer technology on one machine, and they could copy parts of the CD on to a tape for testing purposes. CDs were comparable to the audio cassette in size and ease of storage, but the sound quality was much better and clearer. One disadvantage was that you could not set the exact starting point ahead of time but, on the other hand, there was no need to run through the whole CD on fast forward to find your lesson. However, it was a bit more difficult to find the exact spot within a lesson and to repeat short sections; ease of location depends also to some extent on the controls on each machine, whether you can go back and forth to a particular place following the counter.

The big advantage of the tape recorder was that it could copy music, but toward the end of the 1990s CD copying in one's own computer became widespread. CD editing was more exact, and there was no loss of quality when copying digital to digital. Now we also have MP3 players; MP3 files are more compressed, hence smaller, than the files on the usual music CD, meaning we can put more material on one CD, upload them to the Internet, or send them by e-mail attachment. In addition to copying existing materials digitally, we can make our own using a digital voice recorder. Moreover, with just a cheap microphone we can record our voices directly into the computer; newer computers have built-in sound cards for recording and software for editing. The various recording hardware comes with any necessary physical connections and software to upload to your computer; more sophisticated software is also available for audio editing.

How can these digital recorders and playback with a computer interface affect the teacher's life? An initial possibility would be to digitize any audio tapes that are one-of-a-kind and essential for any special lessons. This is done by running a wire

from the tape player's LINE OUT or headphone jack into the computer's LINE IN or microphone jack and recording (for example, Windows comes with a sound recorder). After saving the file on your computer, you can later turn it into a CD if you have a CD writer. Note that if you want the separate units/segments of the tape to be separate on the CD (the way you can locate separate songs on music CDs), you will have to edit your sound file into separate files for each unit/segment. Then you can re-organize them when you make your CD. I would recommend that teachers save in the WAV format that is the default for copying most music CDs because you will be using the disc on different equipment in different classrooms, and even the oldest CD players can handle WAV files, but they may not play MP3 and other formats. Even so, some high quality DVD players have a copyright protect mechanism and will not play homemade CDs, VCDs, and DVDs even if they are your original material. Thus it is wise to test your CD on the machine you will use it on ahead of time. Computers generally play more formats, but if you will use someone else's computer, use a more common format and try to check it on that machine earlier. For example, your lesson stimulus is on a disc in MP3, but you get to the language lab computer and find someone has deleted the free software to play it; you try to download it again quickly while the students are walking into class, but the Internet connection is too slow. Lesson diverted.

Another important application is making your own listening tests. With editing software, you can take specific questions from the CD that comes with your course book combined with directions that you yourself give by recording your own voice into the computer. You can even add in timed pauses. Editing is far more exact than it was with an analog tape player and recorder. You can still re-record your listening test back to an audiotape or CD or play it through a classroom computer.

In addition to storage on disc or in your computer, you can share speech files by uploading them to the Internet. Students can click on oral instructions, perhaps in the teacher's own voice; they can see and read a text on screen and hear someone read it at the same time. Teachers can design while-listening activities, such as comprehension questions or fill-in-the-blank. For linguistics classes, we can illustrate examples of World Englishes or how Old and Middle English was probably pronounced, for example. When using the Internet, smaller is better, so choose MP3 now until an even more compressed format comes along. Roughly speaking, one minute of an MP3 sound files take about one megabyte (1MB). Insert your sound files into your HTML files as a hyperlink and remember to upload the sound files separately.

If you like to use PowerPoint in class, why not add relevant sound files to click on at appropriate times? If you are talking about language, these could be linguistic examples or other speech samples. Or perhaps you would like to insert a sound effect or a few seconds of music to keep the students awake; some basic sound effects should already be installed on your computer, and CDs with sound effects can also be purchased. Unlike pictures and Clip Art, however, sound files are not actually embedded in the PowerPoint file and will not travel with your file to a floppy disc or external hard drive to be used in another computer. You therefore

need to save your sound files separately to the medium you will use (disc or portable hard drive). Embedded sound files will also not play when you upload your PowerPoint presentation to the web unless you upload the files separately and re-establish the hyperlink.

With digital technologies, too, necessity is the mother of invention, or should I say, application. In speaking classes I sometimes ask students to make an audiotape recording. This not only saves class time but I can more carefully analyze pronunciation problems from a selected reading on an audiotape. In October 2003 two members of my public speaking class missed the due date and then asked if they could send me an MP3 file by e-mail attachment. Fortunately, I agreed and found this a great technique, as easy to use as the telephone without the intrusiveness; immediately I sent back my reply—also in MP3 format. Not long after, a good friend on the other side of the world celebrated a birthday: I got my singing friends together, recorded a greeting on my digital voice recorder, turned it to MP3 and sent it as a singing e-mail attachment birthday greeting, much to the recipient's delight. Thus for teachers and students alike, the boundaries between digital applications for work and play are blurred; we can certainly think about whether the toys we use for entertainment might have some very practical and useful application in our teaching.

Pictures and Photography

When I was studying to become a teacher, we were encouraged to collect colorful pictures from magazines so that we might have appropriate examples for teaching vocabulary or for use as the stimulus for some writing or speaking activity. I wonder how many new teachers today even bother going through magazines for teaching material now that illustrations are just a mouse click away. Suppose you are teaching a beginning class and you want to illustrate vocabulary. There is wonderful Clip Art probably already on your computer. If you teach in a tech-friendly room, present your material on a large screen with PowerPoint (Simmons, 2004), or make colorful vocabulary cards with Clip Art and your color printer, and then laminate the cards. And a bit of Clip Art on a handout full of dense text makes that text seem a bit less formidable.

Not that long ago, if we wanted to use a picture or photo in class, our options were limited. We could pass the photo around, but that wasted time. Provided we still had the negative, we could go to the photography shop and have several large copies made, and these could be used for group discussion, one copy to each group. However, that took preparation time and some money. If we wanted to project a photo or picture on to a screen, we needed a large and heavy special opaque projector. There was no possibility of a color copy, and making an acceptable black and white copy was a matter of trial and error and wasted paper with the copy machine. If we wanted to change the size of the original, again we could only experiment with the enlarge and reduce functions of the copy machine.

Now, however, those pictures from magazines and old photos can be put to wider use with a scanner. Once you scan the original, you can work with the resulting

digital image the same way you work with images from a digital camera. All newer computers have some sort of picture editor installed, and scanners and digital cameras also come with compatible editing software. The basic functions a teacher needs are cropping, brightness, and resizing. With cropping you actually cut off parts of the picture that you do not want. In a family photo of several people, for example, you could select front face views of each individual and present them separately on a handout and have students fill in descriptions of each family member.

Often color photos do not look bright enough on the computer screen, but the software allows you to increase the brightness. If your desired end-product is a black and white handout, you need to make the image even brighter so the detail stands out or, better still, turn the image into something called grey scale (black and white and all shades of grey), where it will appear in grey shades on your computer and you can brighten to the desired level. If your original image is large and your desired output is smaller, you may want to change its size at the picture editing stage. The format to save in is also important. Two common formats are Joint Photographic Experts Group (JPG/JPEG) and Bitmap (BMP). Bitmap files are larger than JPEG files, so for the Internet, saving in JPEG is better; however, if you have simple black and white images, such as line drawings to be used on the Internet, it is better to save in Graphics Interchange Format (GIF). For other applications, if size matters (e.g., you are taking materials to class on a floppy disc), then choose JPEG (a useful site is http://www.widearea.co.uk/designer/index.html).

If you are using Windows and Microsoft Office, then the programs you probably use for creating teaching materials are Word, PowerPoint, and FrontPage (for creating HTML files for the Internet). All of these allow you to insert pictures from either Clip Art or from your own files. Both Word and PowerPoint also have Picture Toolbars that allow you to crop, adjust brightness, and resize or adjust the size to fit your layout; FrontPage allows some editing for size, but it is best to do other editing first in your picture editor before inserting a picture into a FrontPage file.

With digital cameras we can take our own shots. With a scanner we can digitize any hard copy photo. Thousands of Clip Art images are available in our software or over the Internet. The computer lets us modify these images to suit our needs. We can make our own color hard copies or color transparencies with the help of a color printer. Now teachers have no excuse not to create their own materials, from worksheets to websites, that look just as professional as those found in textbooks.

Analog Video: The Video Cassette Recorder

What a revolution it was when we could record tonight's TV news and show it in class tomorrow. The need for a complex projector was gone and we could easily show commercially produced movies on videotape (Winston, 1998, provides a detailed history of the development of the VCR). Moreover, we could record anything off the television. This paralleled the shift from reel-to-reel tape recorders to audio cassette with ease of recording and playback. Smaller and smaller video

cameras followed; we could record not only our children's antics but our students' role plays and other performances, view them with students, give them advice for improvement of various aspects of presentation skills and later let them evaluate themselves as we are often our own toughest critics (Katchen, 1992). Copying from VCR to VCR was easy although the editing might not always be exact, and we could just as easily copy from the video camera to a videotape in the VCR. However, as with audio, successive copies had reduced quality. Soon commercially available videos came with copyright protect mechanisms to prevent all that copying, but the cost of purchasing originals was not prohibitive.

Most VCRs had real-time counters, a feature convenient for locating particular clips during class and, critically, for knowing how far to rewind to repeat a clip since we almost never play a clip just once. Pedagogically, it is better to exploit a 3—5 minute clip in a one-hour class by watching for different purposes than to play a longer clip just once (Stempleski & Tomalin, 1990; Katchen, 1996). As with audio players, we could also prepare the tape ahead of class by winding forward to the starting place. Another useful teaching function is the pause or freeze frame, but on many video payers the pause function is not too stable. The image may wiggle or become fuzzy so that we cannot see on the screen the details we paused to examine more closely. Furthermore, use of pause and frequent starting, stopping, and rewinding could damage the tape and equipment. As with audiotapes, frequent starting and stopping would loosen the tape so that playback sounded slow and garbled; the solution to both is running fast forward and then fast rewind for the entire tape to tighten it up.

There was, however, one annoying little problem that travelers abroad encountered: videotapes bought in one country might not play in another due to a difference in standards of speed and resolution adopted in different parts of the world. Basically, Western Europe and its associates in other parts of the world used PAL, while the USA, Japan, and their associates used NTSC. France used SECAM and the former Soviet Union and its allies favored it, but after 1989, much of Eastern Europe switched to the European standard PAL. Clever hardware makers developed multi-system video players with compatible projectors/televisions, and experts appeared to convert tapes from one system to another. This difference is still with us and continues into the area of digital video.

The videotape player is a useful device and we still have many in our classrooms. However, in Taiwan it is now harder and harder to find shops selling new videotape players, and fewer videotapes are sold. The videotapes we have are deteriorating. Sooner rather than later, we will have to master digital video for the classroom.

Digital Video
A DVD (digital versatile disc or digital video disc, more technical details are available at http://dvddemystified.com/dvdfaq.html) takes up less space than a videotape, and DVD players can be hardly bigger than the size of the DVD playing on it. Moreover, the hardware usually also plays the older VCD and audio CD formats. DVD quality is much higher than that of videotape and, as with audio CDs and

other digital media, that quality is not decreased with successive copying. One big advantage over analog video is the clarity of freeze frame (pause); you can stop the image on the screen and it remains clear, and there is no possibility of damage to the disc.

Another feature language teachers adore is the multi-language captions/ subtitles (Lin, 2000; Markham, Peter, & McCarthy, 2001). Whereas lower-level students might first use L1 subtitles to get the gist then L2 captions to really concentrate on the linguistic input, higher level students may prefer L2 captions and then test themselves by turning off the captions.

Some DVDs contain more than one audio track. For children's movies, this may include an L1 track for a movie produced in another language. Other films may include tracks with on-going comments by the director or actors, commentary on setting or costumes (e.g., *Shakespeare in Love*), or other relevant material. DVDs may contain extra material that could be useful in class—interviews with the actors, insights into how the film was made (e.g., *Shrek*), even games and quizzes (Katchen, Fox, Lin & Chun, 2001). For example, when we used the film *Castaway* in a speaking and listening class, we showed a 20-minute segment on how the idea for the volleyball named Wilson was developed (Luo, 2004).

However, DVDs are still not as flexible as videotapes. DVDs are divided into sections called chapters, which usually contain a few scenes. Locating the start of chapters is done easily through the menu and remote, but ease of locating exact spots within chapters depends on just which functions are provided by your remote. It is useful to be able to move forward or back at a slow or fast pace using the counter. Different brands and models have functions organized in different ways, and it may take the teacher some time to learn to operate the equipment.

Recording a television programme digitally is possible, but a digital video recorder to connect to your television is still rather expensive and there are more complications with compatible standards compared to analog VHS (http:// dvddemystified.com/dvdfaq.html explains these issues). There are copyright protect mechanisms on commercially-produced DVDs, though software writers are always finding ways around this restriction.

Another method to counteract piracy was the establishment of six different world DVD regions. Thus a DVD bought in the USA (region 1) would not play in Asia (mostly region 3) even if both were using NTSC. Asian hardware makers, however, soon began selling DVD players that would play multi-region (but still you need to be aware of the NTSC/PAL distinction for playback on your television). Note that if you play a DVD on your computer, you can set the region code and the NTSC/PAL distinction is also adjusted. Computer makers tell us you can only change the setting up to five times, but others have found ways around this.

If you use DVDs and VCDs in class, you may encounter the same problem you do with audio CDs: some discs will not play on certain machines. Sometimes the problem is one of region, but other times the cause may be copyright protection built into the hardware so that your own made or copied discs will not play. This is an important issue with video editing as DVDs you make yourself, whether or not

copyright issues are involved, may not play on DVD players. Most often the problem has to do with whether the hardware plays DVD-R, DVD-RW, DVD+R, DVD+RW (see http://dvddemystified.com/dvdfaq.html), sometimes also with the format you save in. Think first of how the finished product will be used, on which hardware you will most likely play it. Although your movie is more likely to play on a computer, you still need to check the individual computer as the computer may not have the proper software installed to play a DVD or your kind of DVD or it may not have the proper codecs (decoders to interpret and play from the format your movie is compressed in).

If you use digital video a lot and have different classrooms and equipment, you may find it useful to purchase a small, portable DVD player that plays more regions and formats—although it may not play the discs you made yourself. Then if you have access to only a television, if you can locate the input jacks, just plug in your portable DVD player and you have instant classroom access to DVD, VCD, and audio CD. Or take your own notebook to class (provided there is a compatible projector) on which you are sure your DVD works; you may have to take a set of speakers, too, but they are small and cheap.

We now have digital camcorders; most use a mini-DV tape which still has to be run forward and rewound, but some newer models use a disc for recording. Nearly all these cameras allow some editing within them. However, for more sophisticated editing, connect your video camera to a computer via a fire wire (IE1394). To play video into your computer, you will need to have a video card either pre-installed or installed after purchase. To copy to VCD or DVD, you need to have a DVD writer (which will usually also write audio CDs).

So what else can a teacher do with digital video technology besides showing a film clip in class as one did with videotape? Certainly in class you will want to take advantage of the ease of varying L1 and L2 captions with no captions, and the material supplemental to the film. For materials creation, some of the software that permits you to view DVDs on your computer has a capture function. Thus if you pause the scene, you can capture and save the still image (Katchen, 2003). Suppose you watch the opening scene of a film where the main characters are introduced and then you would like the students to spend some time describing the characters for both language practice and to help them remember who the characters are and what their names are. You could play the scene again and pause when each character appears, but you could also provide a handout or put up a transparency or PowerPoint slide with a still image of the character next to his or her name to help students remember which character you are talking about. Or you may arrange five or six relevant still shots to stimulate students to retell the story.

Students, too, can use this technique in their own presentations in the same way they would use digital photos. It is also possible to insert video clips within a presentation. One does have to limit one's use of these useful techniques because of copyright issues. Nevertheless, it is far easier to have a few still shots prepared for review than to waste time trying to locate them on a running DVD player in

front of a large class of restless students.

If you record your students''presentation activities or would like to create your own videos to use as teaching materials, digital gives you more editing and storage options. With your fire wire and video capture care, you can play tapes from your digital camera into your computer and, with one of the many brands of movie making software available (Windows MovieMaker comes installed with Windows on new computers and is relatively easy to use), you can edit. With editing you can make a more professional-looking product. You cut out those few seconds before starting and after ending, add titles such as the students' names and title of performance, perhaps add music, put in scene change breaks, and so on. However, when you work with video on the computer, you need a lot of temporary storage space on your hard drive. One way to get more space is to purchase an external hard drive (they can be 40 giga and even larger) and set that drive as your temporary storage drive for that program.

What can you do with your finished movie? You can record back to tape or burn a DVD (but as mentioned before, the finished product will probably play on your computer but not on your DVD player at home or the one in the classroom). While it is possible to upload video to the Internet, it still takes a lot up space even with compression (about 10 MB per minute for reasonable clarity), but this will get better in the near future. AVI (Audio Video Interleave, for PC, details at http://www.jmcgowan.com/avi.html#Definition) format is better quality; however, MPEG (Moving Picture Experts Group, for both PC and Mac, details at http://www.mpeg.org/MPEG/index.html) provides more compression possibilities for Internet use.

If you have collected teaching material on videotape in the past, now it the time to convert those deteriorating videotapes to a more permanent medium. Some video capture cards permit analog input; the other option is a small device that works as a bridge, converting analog to digital or digital to analog, with input and output for VCR jacks, S-video, and fire wires. Once you play the video into your computer (from a VCR connected to your video card via a bridge if necessary), you follow the same process as editing from a digital video camera. Of course, the final result will not be digital quality, but you have more flexibility in editing out unwanted portions, adding titles, even inserting questions in text or audio or video format between segments.

Playing clips from a commercially-produced DVD in class is not particularly difficult once you master the remote, nor is using a digital camcorder as the controls are much the same as the older analog. However, video editing is somewhat more complex than audio editing alone. The most frustrating aspect is the various standards, so self-made DVDs do not usually play on DVD players and only play back on computers that have compatible software installed. At this time, the ordinary classroom teacher may not want to tackle such complexities, but after a few years, the software will become more user-friendly, the compression rate will increase, making it more feasible to store video on the Internet, and the problem with standards should get sorted out somewhat.

Implications for Teachers and Students

Schofield and Davidson (2003), in a study on a large urban secondary school in the US, point out that Internet use resulted in increased student autonomy, more personalized student-teacher relations, and the bringing out of special student skills, among other effects. Teachers also changed their role and became learners at times. While I am not aware of any specific studies looking at teacher DVD use, for example, I would expect that here, too, teachers become students at least for a time as they learn how to operate new equipment. This role reversal may be very difficult for adults to manage when their students are much younger than themselves, and it may be more difficult in East Asian societies, where the teacher is respected as the all-knowing one.

Teachers who are good at technology are admired by some colleagues, disliked by others. One teacher illustrates her lectures with colorful PowerPoint slides and uploads the materials to the Internet for student access. Another lectures by indicating the page number in the textbook and writing important points on the board. When it is time for oral reports, some students want to use PowerPoint, but the teacher does not know how to use it. As Lin and Hatano (2003, p. 4) state, "These power shifts in classrooms may be related to the fact that modern technology often deprives experts of their privileged status by redefining the expertise needed to accomplish academic or occupational tasks." Thus, some teachers save face by maintaining the high status professor role: professors do not stoop so low as to make contact with wires and switches. They assign the students to take care of the equipment.

In terms of classroom dynamics, the shift to digital creates a difference not in kind but in degree. The difference is a question of whether the teacher incorporates technological options in his/her teaching, and the question was the same with analog. In this sense ELT teachers are no different from teachers of other subjects. On the other hand, language classes are usually not large lecture classes. Teachers try to maximize student exposure to and use of the target language. Here we are more unique. Our older technologies aided the teaching of listening with recordings of native speakers and the teaching of speaking with recordings of the students. Now the computer is involved and we simply do not know what kinds of innovative combinations will arise. It is not up to the hardware makers to create teaching devices but it is up to the end user—the teacher in the classroom—to combine the possibilities of the hardware with useful software applications, to create the teaching techniques and materials. To me this is the most exciting aspect of digital technology—the exciting possibilities.

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5

L1
A language learning interface for DVD

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This paper discusses a software system called L1 (patent pending), currently in development, which enhances DVD subtitles for language learners. The article presents an overview of subtitling research, a recent survey of DVD use and learning needs among university students in Brunei Darussalam, and a description of L1 development.

Introduction

The title of this conference—Paradigm Shifts in Language Teaching and Learning— is especially timely when we look at recent developments in digital multimedia. The present paper focuses on one major shift in language learning technology: the wide availability of Digital Video Discs (DVD) with same-language subtitling (i.e., verbatim transcriptions of film dialogue in the same language as the dialogue: English soundtrack with English subtitles, for example). DVD subtitles represent an outstanding technological advance in the emerging field of—'edutainment' (education plus entertainment) for language learners around the world. And as this paper hopes to demonstrate, DVD subtitles have only just begun to realise their full potential as tools for greater learner autonomy.

The merits of same-language subtitling as a language learning tool are well established in the research literature (Bird & Williams, 2002, and see review, below). These subtitles provide language support by segmenting speech into a more comprehensible written form for non-native speakers. Until recently, however, same-language subtitles have not been readily available for mainstream films. This is no longer true. DVDs, fast becoming the most popular technology for delivery of video entertainment, now bundle English subtitles with over 90% of commercially available English films. This feature opens up *all* mainstream films to non-native speakers of English who are not yet proficient enough to use only the film soundtrack, but aim to understand and learn *in English* rather than through translation subtitles and/or dubbing. In short, the development of DVD subtitling makes the notion of high quality edutainment a reality for language learners.

Nevertheless, there is still ample room for improvement. For example, DVD

products provide simple verbatim text of the soundtrack but no links to other information useful to learners, for example dictionaries, quizzes, the ability to keep a record of new vocabulary—features of obvious value to someone studying a language. Some computer assisted language learning (CALL) products have attempted to address this problem by producing software and video packages that build information content around a single video's soundtrack and subtitles—plot summaries, quizzes, definitions and the like. Such efforts are of limited value, however, because learners quickly grow bored of watching the same film again and again.

We felt that there was a viable way around this problem: create a software system that can be used with any subtitled DVD film. The present article describes such a system. This is an ongoing project involving Cambridge University, Oxford University Press, and APL Language Systems, a language learning software development company.

To anticipate a more detailed discussion later in this paper, the aim of the project is to create a language learning software and content system that provides a rich language enhancement for all DVD subtitles across all available DVDs. We have called the system *L1*, and have a patent (pending) internationally for the system (see Appendix B, Figures 1 and 2 for screen shots). In broad terms, the *L1* approach has been as follows: we have built a DVD playback interface, software and content package that is generic. Once installed on a DVD player or computer[1], the system will work with any DVD. The system renders the subtitles as interactive elements on the screen linked to a language learning system that includes dictionary content (Oxford University Press) and other useful language support (described below).

We feel that this approach is important because we have adapted all mainstream DVDs to the language learner using a single software and content system. *L1* is designed to open up any and all DVD films (those that include English subtitles) to the learner. It completely frees the learner to walk into a language laboratory or DVD shop and know that they can select any movie they desire and learn more effectively.

As a backdrop to *L1* development, below we review previous subtitling research. We then describe the most recent of our user surveys (conducted in Brunei) of language learners who use DVDs. Finally, we describe the current and future *L1* developments.

Subtitling Research

■ Why mainstream movies?
Part of the impetus for *L1* development lies in the obvious potential of entertainment video as a language learning resource. Authentic video recordings—

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[1] Current technology requires *L1* installation and use on a computer with a DVD drive. Software installation for TV/DVD player medium is currently difficult since most TV DVD players do not allow software installation. Thus in the present paper *L1* development is focussed primarily on computer/dvd hardware delivery.

that is, videos which have been produced for native speakers of a language—are a rich source of target language for second-language learners (Allan, 1985; Vanderplank, 1988, 1993; and see Tschirner, 2001 for discussion of DVD video in language classrooms). A motion picture, for example, can provide the viewer with an entertaining story line, an almost maximal (non-linguistic) visual context, and the kinds of variation in accent, speed of articulation, and range of vocabulary that language learners must be able to comprehend in order to achieve native-like proficiency (Lonergan, 1984). However, as learners and teachers know, this authenticity in the spoken language can also create a serious problem: if a student is unable to decode the soundtrack—that is, convert the spoken language into meaningful information—overall comprehension and acquisition can become difficult if not impossible unless some kind of assistance is provided, for example teacher mediation (Vanderplank, 1988). Same-language subtitling has been proposed as another way of providing that support (Borras & Lafayette, 1994; Chung, 1996; Vanderplank, 1988, 1990, 1993).

■ Why same-language subtitles?

Subtitles can come in a number of forms: 'interlingual', 'reversed' (Danan, 1992), or 'same-language' (Jung, 1990). Interlingual subtitling refers to subtitling in the viewer's native language, that is, the subtitling typically found in commercially available foreign-language films. Reversed subtitling refers to a presentation in which the subtitles are in the foreign language and the soundtrack is in the native language (Danan, 1992; d'Ydewalle & Van de Poel, 1999). 'Same-language' subtitles, to avoid confusion between 'inter' and ''intra', refer to a transcription presented in the same language as the soundtrack. The three kinds of subtitling are identical in all other respects: they are presented at the bottom of the video screen and appear in short blocks (generally about nine words per frame) synchronised with the spoken dialogue of the film.

Interlingual subtitling (subtitles in the viewer's native language) may be less desirable as a learning aid than same-language subtitling because it encourages students to use their native language (Jung, 1990). Many current teaching methods (e.g. communicative language teaching) tend to encourage the use of authentic target language during learning (Richards & Rodgers, 1986). For non-English-speaking viewers of authentic English videos whose interest is only entertainment, subtitles in the viewer's native language can solve comprehension problems. However, viewers interested in learning to comprehend *spoken* English may find these subtitles less attractive because the learner needs to develop the ability to comprehend not only the meaning of what is presented but also the ability to recognise the words in the soundtrack and to convert those sounds to correct meanings.

L1 is therefore currently focussed on development of same-language subtitling. While it is sometimes impossible to provide verbatim transcriptions of what is being said in same-language subtitling, 'fully duplicating subtitles' are able to provide complete transcriptions of most of the soundtrack (Garza, 1991; Jung, 1990). Most DVDs we have tested provide near-perfect verbatim transcriptions.

■ **Same-language subtitling and comprehensible input**

Many subtitling studies make use of Krashen's (1981) well-known 'comprehensible input' hypothesis, which stresses that a crucial condition of foreign language acquisition is that the language input is 'comprehensible', that is, understandable semantically. Subtitling researchers often argue that, since in many cases second language learners are more proficient in reading ability than listening ability, providing a transcription of a soundtrack increases the chances that input will be comprehensible, and thereby increases the likelihood that learning will occur (d'Ydewalle, Praet, Verfaillie, & Van Rensbergen, 1991; Garza, 1991). Goldman (1996), for example, argues that, for language learners,

> reading the printed words of actors they hear clarifies the often slurred, accented, or elided speech of TV dialogue. Seeing the spelled-out expressions of, for example, "Jeet yet?" as "Did you eat yet?" ... enables ESOL students to make visual sense of speech that may otherwise be incomprehensible to them. (p.15)

Vanderplank (1988) similarly argues that the potential value of same-language subtitling is that it provides learners with "...a key to massive quantities of authentic comprehensible input" (p.3). The common assumption is that by providing learners with information which is familiar and/or 'decodable' (i.e., can be converted from text or sound into meaning), increased comprehension is possible and foreign language acquisition can occur more efficiently.

This line of argument appeals to common sense: if a familiar word or phrase is spoken in an unfamiliar accent or too rapidly for students to decode, they can perhaps turn to the transcription for a comprehensible source of information. Subtitling studies (reviewed in detail below) have overwhelmingly demonstrated that comprehension of meaning is clearly boosted by same-language subtitling relative to no-subtitling presentation conditions (Chung, 1996; Danan, 1992; Garza, 1991; Holobow, Lambert & Sayegh, 1984; Lambert, Boehler & Sidoti, 1981; Price, 1983; Vanderplank, 1988, 1990, 1993). For example, Garza (1991) conducted a classroom study which compared two experimental groups of 35 advanced learners of English. Both groups viewed four short videos but only one group was provided with subtitles. The subjects answered written, multiple-choice questions about the plot of the video. Five subjects from each group were then interviewed. They were asked to recount various events they had seen in the video segment. Student responses were tape recorded and transcribed. The transcriptions were then compared to the exact wording the subjects had encountered in the video segment. In the multiple choice test, the subtitling group scored significantly higher than the no-subtitling group. Moreover, the interview data revealed that the subtitling condition subjects "consistently demonstrated a much greater propensity to remember and use the original lexicon and lexical collocations from the video segment when viewed with captions" (Garza, 1991, p. 245). By contrast, subjects in the no-subtitling condition, while able to remember the basic story, were less able to retell the story in the original words they had encountered.

Vanderplank (1988) argues that subtitling can also aid vocabulary acquisition by making learners conscious of new language which would otherwise be lost in

the stream of continuous spoken language. One obvious advantage of subtitles is that the text shows the borders between words in sentences, whereas spoken language typically arrives in an unbroken flow so that divisions between words must be inferred by listeners. Cutler (1989) remarks that,

> there is, alas, no direct auditory equivalent of the little white spaces that so conveniently segment one word from another in continuous text. Speech is truly continuous. Segmentation is necessary because lexical access must operate with discrete units, since the lexicon must store discrete units (p.342).

Since subtitling provides this segmentation, it could be a valuable tool when students are trying to pick out words (both familiar and new) in an authentic video, where dialogue is rapid, often masked by extraneous noise, and/or made even more difficult by unfamiliar accents. Vanderplank (1990) makes it clear, however, that much of the acquisition of new language in the context of subtitling was not, for the subjects in his study, an automatic consequence of viewing subtitles with a soundtrack: students needed to consciously attend to language in the two modalities and employ strategies such as note-taking in order to derive benefits from the subtitling.

To summarise, the text modality can provide clear, segmented, written equivalents of spoken language. Students can read that text and, if they are familiar with the written words, will have greater comprehensible input than if they are provided only with a soundtrack which is too fast, garbled, or in an accent too unfamiliar to be understood. To the extent that comprehensible input aids language acquisition (Krashen, 1981), same-language subtitling shows great potential. Moreover, from the standpoint of conscious strategies employed in learning new vocabulary items, if students hear and read an unfamiliar word, they have an opportunity to apply conscious learning strategies to it. For example, students can more easily take note of its spelling, accurately write it in a vocabulary notebook, and find it in a dictionary. These sorts of strategies have repeatedly been argued to enhance aspects of language learning in general, and vocabulary acquisition in particular (Ellis, 1997; Oxford, 1990; Schmidt, 1990). If one considers a conscious learning strategy such as dictionary use, seeing a written version of heard words seems useful and convenient since students will, for example, often not know how new spoken vocabulary items are spelled, and without this knowledge may find it difficult to locate words in dictionaries.

■ Building phoneme awareness

Recent research into the relationships between a learner's first language orthography and their phoneme awareness suggests that greater proficiency in using an alphabetic script enhances phoneme awareness (Bertelson, 1986; Bertelson & de Gelder, 1991; and see Cheung & Chen, 2004, for a review). Speech can be regarded as sequences of syllables, decomposable into the demi-syllabic units of onsets and rimes. Onsets and rimes are made up of phonemes. Bertelson (1986) argues that orthographic experience affects awareness of phonemes more than the awareness

of other units (Bertelson, 1986; Bertelson & de Gelder, 1991). Whereas an awareness of syllables, onsets, and rimes emerges spontaneously with speech development, the ability to analyse spoken language into phonemes—that is, *phoneme awareness*—requires support from alphabetic reading. This is because the identity of the phoneme is made explicit only in alphabets. Assuming that this model holds true to some extent for all learners, one can see the potential of simultaneous presentation of English subtitles with English speech in films: since English is an alphabetic script, it may encourage learners whose first language script is a syllabary or logographic system to begin attending to the phoneme level of analysis in English speech.

■ **Building reading proficiency**
While no research studies have explored the effects of same-language subtitles on the development of reading proficiency, it seems reasonable to assume that any medium that encourages learners to read will be beneficial. Moreover, since the text is supported by native speaker pronunciations, the bimodal text and sound input should be of assistance to learners in developing an understanding of the relationship between English orthography and full flow of English speech.

Enhancing DVD Subtitles: The *L1* DVD System

While the foregoing review strongly supports the broad conclusion that film with same-language subtitling can be useful to language learning, there are some potential drawbacks of subtitling in current DVD implementations. First, there are concerns about attention limitations and the possibility of learners being distracted from the soundtrack by the subtitles, leaving attention focussing on the text rather than the audio dialogue. Bird (2000) and Bird and Williams (2002) tested simultaneous bimodal text and sound presentations against single modality presentations and found that the bimodal condition created no apparent interference with auditory processing and learning, and in fact led to improved implicit learning of novel *spoken* word forms. Concerns that dividing attention between modalities might interfere with listening comprehension were not borne out in this study. The results demonstrated that bimodal inputs can be attended to and used to bolster both the implicit and explicit aspects of vocabulary learning. However, these experiments tested single word presentations rather than words in full sentences, and so there does remain a question regarding processing of long stretches of dialogue under bimodal conditions. Presumably, full sentences could cause confusion or excessive processing demands. There are a number of ways of exploring this issue, but for the purposes of software development we chose to ask users directly about the benefits and problems (e.g., distraction) of same language subtitles (described below).

This potential problem of distraction feeds into the larger question of how willing people are to mix language learning with video entertainment. One of the pervasive problems of edutainment lies in the fact that consumers of entertainment often do not want to be distracted by educational add-ons unless there is a very

strong motivation to learn. In order to investigate these issues of willingness to learn, distraction problems, and current limitations of DVD subtitles for learning, we have conducted surveys of DVD users/language learners in various countries. Most recently, and most relevantly for South East Asia, we conducted a survey at the Universiti Brunei Darussalam.

DVD User Survey: Brunei Darussalam

Our primary interests in this survey were in finding out how frequently and for what purposes learners in Brunei watch English DVDs with same language subtitles. The learners in the survey were particularly relevant to our project for two broad reasons. One was their proficiency in and desire for better English. The other reason related to their very frequent use of DVDs. We were interested in how often and why they use the subtitles, as well as what problems they have found in using them. All of this information has been used as part of our software development. We had conducted very similar surveys in the UK (using European students), but we felt it unwise to try to generalise from those surveys to larger populations around the world, where cultures, motivation levels, access to technology, and learning purposes are likely to be somewhat different.

As a backdrop to the study, it will be useful to summarise the role of English in Brunei:

- Language: English official second language (Malay first language)
- English-medium schooling from Primary 4
- Informal English use: Significant presence but not an equal bilingual Malay/English use and proficiency across the country
- Government stance: Highly prioritised push for greater proficiency in English

In short, Brunei is striving to become a bilingual country, and the government is keen to encourage a high proficiency level in English. Citizens here, especially those attending university, are well aware that a native speaker proficiency in English is an invaluable asset for their careers.

Method

◼ **Subjects**

We surveyed 100 first and second year students at Universiti Brunei Darussalam to find out about their use of DVDs and subtitles (see Appendix A for questionnaire). Classroom groups of students were selected from first and second year pool of classes who are currently taking English skills courses (English for Specific Purposes, especially for academic purposes and science) as part of their degree programme. The profile of the students was as follows:

- 100 Universiti Brunei Darussalam students (1st and 2nd year of study)
- Age range: 19—22 Years
- Proficiency: average English 'O' Level C-Grade
- Years learning English: average 13 years (formally and informally)
- Strong need for English: career (95%)/university course success (95%)

This pool of students was chosen because they all had roughly the same educational levels and histories with learning English. We were also aware in choosing these students that they had on average entered the university with a 'C' grade English 'O' level, and this proficiency level was of prime interest to us: not native speaker, but proficient enough in English to be likely to make use of English subtitles as opposed to translation subtitles. Thus we had a relatively homogeneous and relevant set of subjects. At the same time, however, we should stress that this sample is really not representative of the population as a whole since these students are generally better educated and perhaps more motivated to learn English than many Bruneians of the same age who are not attending a university. The purpose of the survey was really to focus on the habits of the university's English learners.

■ **Survey design**

We divided the questionnaire (see Appendix A) into four sections: personal information, in order to develop a profile of the users; DVD technology usage, to determine the subjects' access to DVD technology and frequency of use of the technology, including the available same-language subtitles; and a more detailed usage section which aimed to determine whether subjects were using subtitles simply as part of comprehension of an entertainment medium, and whether the subjects also use the subtitles to learn. Sections 1 and 2 were yes/no questions with space to specify frequency of use of the technology and subtitles. In Section 3 we developed a four-point scale to explore problems and possible enhancements to DVD subtitles for comprehension and learning: Strongly Agree/Agree/Disagree/Strongly Disagree. We did not use a 'neutral' point on the scale ('no opinion') because we felt the questions were of a nature that a subject should be able to either agree or disagree to some extent with all of the statements.

■ **Procedure**

The questionnaire was administered during students' class time. Five different classroom groups were selected at random from within the pool of students described above. Students were told that the questionnaire related to their use of DVDs, and it was aimed at finding out a few things about their likes and dislikes when using English subtitles. Students were given approximately 20 minutes to complete the questionnaire. We piloted the questionnaire twice with two groups of 10 subjects of the same personal profile as the subjects in the experiment, and gave the students opportunities to comment on the questionnaire and whether there were any issues they wanted to mention but which had been omitted in the questionnaire. The survey was conducted by the lecturers of each particular classroom group. The students were instructed to answer as honestly as possible. The students were not told why the questions were being asked, nor who had constructed the questionnaire.

Results and Discussion

Main results of relevance to the present paper are discussed below. All reported percentages are averages rounded to the nearest one percent.

■ DVD usage

For *L1* system development, these students are of particular interest not only because they are fairly advanced learners of English, but also because of the high market penetration of DVDs in Brunei. Table 1 shows the main relevant results with respect to ownership and use of DVD hardware and software:

Table 1	DVD access and use
ownership of DVD player + TV	81% of respondents
ownership of (household) computer with DVD Player	77% of respondents
DVD player + TV use	4 movies per month
Computer with DVD player use	3 movies per month

These figures show high penetration and usage of DVD technology in Brunei, as well as a strong need for English. In particular, the use and reported number of films (total of seven on average) are likely to be higher here than in some other countries, reflecting a Brunei-specific access to DVD and emphasis in Brunei on home entertainment.

Table 2 shows mean percentages of time viewing DVD videos with subtitles on screen. We were interested in knowing whether the subjects also found Malay subtitles useful, that is, translation subtitles.

Table 2	Subtitle usage
Use of English subtitles with English DVDs	82% of respondents
Proportion of viewing time with English subtitles	91% of viewing time
Use of Malay translation subtitles	29% of respondents
Proportion viewing time with Malay subtitles	34% of viewing time

The fact that English subtitles are used more frequently than translation subtitles can be accounted for by the subjects' relatively high proficiency in English. The high percentage of time (91%) with subtitles on probably relates to the fact that the subtitles are generally reported not to be a distraction (see Table 5, below), and so remain on the screen regardless of whether they are being read. Presumably subjects simply leave the subtitles on and consult them when they are not sure of what was said. Particularly in the TV/DVD medium, switching the subtitles on and off is somewhat cumbersome because the viewer must stop the film and go back to the main menu. Thus, the percentage here should not necessarily be taken as a measure of dependence on the subtitles, but rather can be attributed to the

inconvenience of switching them off when not necessary, and the fact that, as we see below, subtitles are generally not found to be a distraction from the soundtrack.

■ Reasons for using English subtitles

Below we have divided the reasons for using subtitles into two categories: Comprehension and Learning. Not surprisingly, 100% of those who reported using English subtitles stated that they use the subtitles for comprehension. Table 3 shows the mean percentage of respondents who answered 'yes' to each of the suggested comprehension problems.

Table 3	Sources of comprehension problems

Source of problem	Yes %
Strange accents	58%
Unknown words	67%
Speed of dialogue	91%

It is interesting to note that speed of dialogue is reported as the main problem. Having viewed many movies on DVD, the respondents were well aware from reading the subtitles that their biggest problem is not the vocabulary (though this too presents a significant problem, as the table shows). Had subtitles not been available, it would clearly be much harder to identify one's comprehension problems: if the learner does not already know a word (spelling, sound, meaning), it will be difficult to decide upon hearing that word whether or not the problem is that a *known* word has been spoken incomprehensibly or whether an *unknown* word has been spoken. Informal discussion with some respondents made it clear that they were perfectly aware of this distinction precisely because they were able to consult the subtitles and compare what was heard with the transcription. In a sense, then, the subtitles act as a useful self-diagnostic: learners are able to distinguish between a decoding problem (known word but unable to recognise it) and a knowledge problem (unknown word).

With respect to accent and speed, it is of course difficult at times for a learner to distinguish between accent problems and speed problems since an unfamiliar accent could make the speech sound 'fast'. Our main concern was to know the extent to which the respondents felt that they had a difficulty decoding the speech stream, and we assume that this decoding problem will be related to speed and accent, and so we divided the decoding problem into these factors in order to capture both opinions.

Sixty-five percent of subjects also reported using the subtitles to *learn* English. We had predicted that fewer students would report using the subtitles to learn, as this is primarily an entertainment medium, after all. We were, however, still impressed by the percentage of viewers reporting an effort to learn. We then asked learners about their learning method (Table 4).

Table 4	Learning method	
Pause and write down new words?		89% No
Just try to remember 'on the fly'?		94% Yes

This result was not a surprise: since learners are in part watching a film as entertainment, any task which draws them away from the flow of the film will tend to be avoided. Since writing new words down requires time and tools (e.g., pen, paper, dictionary), viewers are not keen to take the time. Nevertheless, the subjects reported making some effort to remember new words. This kind of result suggests an excellent opportunity to provide a better learning environment: willing learners but an absence of appropriate tools to aid learning.

■ Why not for learning?

We were also interested in knowing whether the reason for not learning was due to the limitations of the subtitles as a resource, or whether respondents simply had no interest in learning. Of those who said they do not use subtitles for learning,

- 100% reported use of subtitles only to aid entertainment (follow the plot)
- 25% reported that is was too difficult to try to learn (e.g., write down new words) during DVD viewing
- 20% reported generally not being interested in learning when watching DVDs

We have repeatedly found in our surveys a significant number of respondents who simply do not want to mix entertainment with learning. In general, the problem seems to reside in the fact that, historically, there has generally been a distinction between educational products and learning products (though clearly there are exceptions, such as Sesame Street, but children are very differently motivated than experienced adult consumers). In short, these people are used to buying DVDs for entertainment, not learning, and are reluctant to break the habit. Again, however, this is an excellent opportunity and a huge challenge for language learning materials development: to provide a tool that is helpful, efficient, and supportive within a entertaining target language medium.

■ Problems and enhancements for DVD subtitles

We then asked the subjects about problems they encounter when using subtitles, when trying either to comprehend or to learn (see Table 5 on the next page). Items 1 to 3 are clearly dependent on the respondent's proficiency in English. For this group of students, responses suggest a fairly advanced proficiency since the majority did not find the subtitles too fast or distracting, nor did subtitles contain too many unfamiliar words. However, a significant number of students felt that there are problems with subtitles in all areas. *L1* is essentially directed at helping learners cope with these problems.

The responses to Item 3 are especially pertinent to subtitling research because there is always a concern (e.g. Chung, 1996) that learners begin to read more and listen less when shown subtitles, and hence build a dependency on the text rather

Table 5	Summary of reported problems with subtitles			
	Strongly Agree	Agree	Disagree	Strongly Disagree
1. Subtitles too fast?	2%	26%	72%	0
2. Distract you from the audio?	3%	15%	80%	2%
3. Too many new words?	4%	28%	68%	0
4. Hard to navigate/pause?	5%	30%	64%	1%

than better listening ability. This remains a possibility, but we would argue that a strategic learner who is trying to develop listening skills is well aware that the subtitles are a learning tool and need to be eliminated eventually. In the present survey, moreover, the respondents did not perceive any interference or dependency (though they could of course be mistaken about what is happening unconsciously). Informal discussion with respondents revealed that in fact the subtitles were perceived as helpful in gaining 'footholds' into the stream of speech: in psychological terms, the learners seem to strategically compare what they hear with what they read in order to develop mappings between orthography and phonology. This remains speculative, but at least in terms of learner perceptions, distraction from the speech stream was not reported as a problem.

Finally, it should be stressed the psychological effects of the bimodal input will to a large extent depend on what the learner is trying to achieve—comprehension of meaning, ability to listen better, ability to read better, and so on. Again, we assume that learners will strategically attend to and employ the subtitles for their purposes, and in the case of 'listening', the overwhelming majority of respondents did not report that the subtitles were a distraction from the soundtrack.

Item 4 was a slightly more difficult question because respondents can only comment on hardware they are familiar with using. Thus, while respondents seem satisfied with the control features of their DVD players, they may not have had any notion of alternatives. Therefore, we posed the question in a different way by offering new features. Item 1 in Table 6 asked students about whether such navigation *could be easier*, and we found a strong agreement here. The trouble with questions about

Table 6	Potential enhancements for subtitles			
	Strongly Agree	Agree	Disagree	Strongly Disagree
1. I would like to be able to navigate more easily (subtitle by subtitle)	80%	14%*	6%	0%
2. If I had an easily accessible dictionary link, I would use it	84%	12%**	4%	0%
3. If I could click and save new words (for later review), I would do it	63%	31%**	6%	0%

* all respondents   ** respondents who reported 'learning' English

ease of use is that respondents have no basis for comparison, but clearly Table 6 shows that with a little prompting, the respondents reveal a feeling that control of playback could be better. *L1* aims to develop this increased ease of control.

Responses to Table 6 generally accord with results for users in Europe: in general, large percentages of respondents (learners) see entertainment video as a good learning resource but want more facilities for learning. Note that there was no strong disagreement with any of these statements. In short, these people want 'edutainment' DVD: They are willing to interrupt films to look up new words, and to save them for later study.

Summary

Our general impression from surveys and interviews around the world is that if someone wants to learn English—the language of global communication, hence an enormously important skill—this desire/need typically overcomes the urge simply to watch for fun and ignore the soundtrack when it is incomprehensible. By contrast, when we interviewed native English speakers about the system, there was generally less enthusiasm because these people were learning, say, Spanish as a hobby, and felt far less inclined to interrupt a movie and take time to replay scenes and so on. Their main desire was to have a very fast dictionary look-up with minimal interruption, and they showed little attraction to any more add-ons that required time and effort. As a final note here, surveys of software users therefore need to take careful account of learner aims and contexts of learning when designing a language learning software system: a Japanese person who desperately needs English to advance his career will want far more facilities and information from a system than an English person learning Italian in order to say a few words to a waiter while on holiday in Tuscany. The latter will simply give up more easily rather than ask for more learning tools. It is therefore dangerous to make too many generalisations when designing language learning software for a world-wide audience.

Nevertheless, once one has identified a body of people with a strong motivation to learn, cultural differences may become less important, based on our surveys. The description of *L1* below discusses some of the main features that we have found to be fairly uniformly wanted by respondents.

L1: **Building on DVD Subtitles**

The present section describes *L1* system development in response to the main results reported above as well as previous surveys in Europe, all of which show generally the same patterns regarding the findings reported above.

Appendix B shows two screen shots of the *L1* system. Appendix B, Figure 1 shows the DVD Player Screen. Appendix B, Figure 2 shows the Study Mode screen. Below we concentrate on the features of *L1* related to the main issues in DVD comprehension and learning.

■ Control of playback/navigation: *L1* player screen
   (Appendix B, Figure 1)

   While a large percentage of respondents reported that navigation is not particularly difficult using their current systems, an overwhelming majority also felt it could be easier, especially when trying to study subtitles carefully. *L1* partially attempts to solve this problem by allowing subtitle-by-subtitle navigation. The manner in which this is achieved technically depends on the hardware being used: that is, the solution *L1* provides for a TV remote control will be rather different from that for a computer with a keyboard and mouse. Nevertheless, the guiding principle is the same: fast, efficient navigation on a per-subtitle basis is a feature that does not currently exist in any sophisticated way but would clearly be of benefit to learners studying the subtitles in detail. *L1* aims to solve this problem.

   Also shown in Figure 1 are the following buttons: *Quiz* (not currently implemented, but discussed below), a *Session Details* button, which takes the user to the Study Mode Screen (Figure 2), a *Subtitles on/off* button so users can easily view with or without subtitles (as when trying to avoid reading). When subtitles are 'on' they appear at the bottom of the movie screen as in the case of normal DVD subtitles. Finally, the *Dictionary* button allows the user to access definitions without going to the Study Screen—that is, by having a pop-up window appear. Broadly speaking, Figure 1 shows a screen designed with the minimum features that are useful to both keen learners and those learners who are less interested in careful study; Figure 2 shows a study mode which allows careful study and more detailed language support.

■ **Access to language features:** *L1* **language study screen**
   (Appendix B, Figure 2)

   We were encouraged by the enthusiastic response to the idea of dictionary look-up. This is a core feature of the *L1* system, and we have repeatedly found that non-natives who have any interest at all in learning would like to have an easy link to dictionary databases. *L1* uses Oxford University Press's Advanced Learner Dictionary (ALD, under licensing agreement). We chose the OUP ALD because of its definitions are tailored to language learners (high-frequency vocabulary in definitions). *L1* searches entries for the head word in the dictionary database and returns the full entry to the definition pane shown in Figure 2. We are currently working to increase the database size by bundling more dictionary (idioms, phrasal verbs, slang) and encyclopaedia content to increase the amount of information available from any given subtitle word or phrase. We are also exploring the best ways of presenting this information so that it is not excessive, and it is easy to access without long search-time delays. For example, we are aiming to have the search return the exact sub-entry phrases that matches the subtitle. Thus, for example, if the user clicks on a high-frequency word like *get*—a word which has many sub-entries (e.g., phrasal verbs such as *get lost*) the system searches for *get*, but also searches for sub-entries in the dictionary that match words groups in the subtitle. Thus, if *get* is next to the word *lost* ('I told him to get lost'), the search

engine will find *get lost* in the dictionary and return that entry to the user first, as the 'best match'. The aim here is to achieve maximum contextualised information about the word being queried, thus providing definitions most relevant to the user's specific problem in the context of the utterance. Ultimately, of course, the success of this approach will depend on the quality and quantity of our dictionary content.

Also shown in Figure 2 is a *Save in Session* function. This allows the learner to save desired vocabulary for later review, and to be able to conveniently return to the precise point in the DVD where the word was presented in order for learners to review the context of the word's use. Again, we were encouraged by the enthusiastic response for this. We had wondered about the extent to which users would want to take time to save and later review vocabulary. The strongly favourable response to this encourages us to implement the feature and also enhance it in various ways, such as building saved words into post-viewing vocabulary quizzes.

One other important navigation feature is the *Selected Subtitles* drop list box in Figure 2. Here the user can view subtitles that have come before (four subtitles before and four after the current subtitle). This allows the user to view the surrounding dialogue context of a given subtitle, and allows a search for definitions of other words in other proximate subtitles that are of interest in the drop-list box.

■ **Current research**

We are currently developing our user interface in order to maximise ease of use. Three key components of usability research are as follows:

a) Screen size/resolution: Computer screens and television screens vary widely in size and resolution. We are currently studying the relationship between the size of the screen and the resolution of the *L1* interface. Button and font sizes need to be adapted to the screen size and resolution so that they are easy to see and to click.

b) Control of remote/mouse/keyboard: Control of playback is obviously key to usability, and *L1* will need to adapt to the fact that using a mouse to control playback and various buttons is much easier than using standard remote control devices on television screens. The merging of computer and television technologies will obviously affect our design decisions over the next few years.

c) We are currently testing out Beta version with language learners to gain feedback on how intuitive the system is. We aim to minimise the training required to use *L1*. This requires a balance between providing useful features while avoiding an overly taxing learning requirement with large numbers of features, buttons, drop-list boxes and so on. We are prioritising features in order to keep the screen uncluttered.

d) Quick save: We have included a quick-save function that allows a user to mark a given subtitle without having to see definitions at that moment. This has been developed to accommodate users who do not want to interrupt the flow of the movie and wish to study unknown language later, after viewing the entire movie.

■ **Future functionality**

● Testing/Quiz function: Also in development at the moment is a testing feature which uses previously saved vocabulary in a variety of tests. We believe that such testing allows the learner to recycle vocabulary to aid reinforcement of learned words.

● Translation: This would allow users to obtain translation into the native language. Of course there are many difficulties with translation since it is not easy for the computer to take into account context of use of individual words and phrases. This feature therefore remains a research area rather than a current implementation.

● *L1* for other languages: We should also point out the perhaps obvious fact that *L1* concept can be applied to any film in any language simply by plugging in a different dictionary database. We will aim in future to gear *L1* to other languages.

● Multi-user environment: Currently we are focussing on individual autonomous uses of *L1*, such as in a language laboratory or at home. However, we are currently exploring a multi-user environment such as classrooms, where learners could all be watching the film simultaneously but interacting as individuals. Thus, for example, all users could be watching the same movie on their own individual screen, but at different paces (as in the case of systems on some airlines, where passengers can watch the same movie without being tied to a single schedule of viewing). This frees up the learner to move at her own pace, and frees the teacher to provide one-to-one assistance to students while they study autonomously.

● Look-up hover function: We are aiming to allow users to hover their cursor over the subtitles in the Player Screen (Appendix B, Figure 1) to obtain definitions without having to leave the Player Screen. This is in response to the clear trend we have seen for users to be more willing to use a system that minimises distraction from the movie. Speed remains a key to satisfaction, even when users report willingness to use language enhancements during DVD viewing. One shortcoming of such an approach however is that long entries will occupy too much space and it may be undesirable from a learning point of view to provide shorter, possibly misleading entries.

Conclusion

Technical advancements in digital multimedia delivery hold huge potential for second language learners. We have found strong user support for the general notion of building language enhancements around mainstream entertainment. *L1* aims to realise this potential. Our research is ongoing, but we hope to have a working system available for language learners commercially within twelve months. We look forward to the day when *L1* is readily available to home users and language labs, allowing more and more learners the opportunity to experience the benefits of edutainment and increased autonomy in foreign language learning.

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DVD Video Questionnaire

I am interested in finding out some information regarding your experience with DVD (**not** VCD) movies. Thank you for answering the following questions.

Personal Information
1. Your Age: _____
2. Number of years learning English: _____
3. Why do you study English? Tick one or more of the following:
   [ ] It is a school/university requirement
   [ ] It is enjoyable/a hobby
   [ ] I need it for my future career

SECTION 1
Please circle **Yes** or **No** for each statement, and fill in the amounts in each blank.

1. I (or my family) own a DVD player plus television.   Yes / No

2. I (or my family) own a computer with a DVD player.   Yes / No

(IF YOU ANSWERED **NO** TO QUESTIONS 1 AND 2, YOU DO NOT NEED TO ANSWER THE QUESTIONS BELOW. PLEASE SUBMIT YOUR QUESTIONNAIRE NOW.
IF YOU ANSWERED YES TO 1 AND/OR 2, PLEASE CONTINUE)

3. How many English DVD movies do you watch per month?   _____ per month

4. I watch movies on my **Computer** with DVD player.   Yes / No
   (a) If YES, how often? _____ per month

5. I watch movies on my **Television** with DVD player.   Yes / No
   (a) If Yes, how often? _____ per month

6. When I watch **English** DVDs, I use the **English** subtitles.   Yes / No
   (a) If yes, how often? _____ % of total viewing time

7. When I watch **English** DVDs, I use the **Malay** subtitles.   Yes / No
   (a) If Yes, how often? _____ % of total viewing time

SECTION 2
Please answer **Yes** or **No**, and then the follow-up questions.

8. I use the **English** subtitles to **UNDERSTAND** the dialogue   Yes / No

   If **YES**, please now circle **yes** or **no** for the following statements:

   I use the subtitles because
   (a) the accents are strange   Yes / No
   (b) I don't know the meaning of some of the words   Yes / No
   (c) the speakers talk too quickly   Yes / No

   Any other reasons, please write them below:
   _____
   _____
   _____

If **NO** (for Question 8), please circle **yes** or **no** for the following statements:

I don't use the English subtitles because
(a) the subtitles are too fast   Yes / No
(b) there are too many unknown words in the subtitles   Yes / No
(c) I prefer to use the Malay subtitles   Yes / No
(d) I just want entertainment and don't care about understanding
     the whole dialogue   Yes / No
(e) it's too hard to go back and find the subtitles after they have
     disappeared   Yes / No

Any other reasons, please write them below:

_____

_____

_____

9.   I use the **English** subtitles to **LEARN** English.   Yes / No

If **YES**, please circle **yes** or **no** for the following statements:
(a) I pause the movie and write new language down   Yes / No
(b) I just try to quickly remember new language   Yes / No

Any other ways of using the subtitles to learn? Please comment below:

_____

_____

_____

If **NO** (for Question 9), please circle **yes** or **no** for the following statements.

I don't use the subtitles to learn because:
(a) I only want entertainment when I watch DVDs   Yes / No
(b) It is too hard to try to remember new words when I watch
     a movie (need to write them down etc)   Yes / No
(c) I don't like learning anything when I am watching the movie   Yes / No

Any other reasons, please write them below.

_____

_____

_____

SECTION 3
For each statement below, please **circle** one of the following:
    Strongly Agree / Agree / Disagree / Strongly Disagree.

10. The English subtitles are difficult to read because they are too fast.
     Strongly Agree / Agree / Disagree / Strongly Disagree

11. The English subtitles distract me from the movie and soundtrack.
     Strongly Agree / Agree / Disagree / Strongly Disagree

12. The English subtitles give me too many new words so I can't really understand
     them.
     Strongly Agree / Agree / Disagree / Strongly Disagree

13. The English subtitles are easy to read and not too fast.
     Strongly Agree / Agree / Disagree / Strongly Disagree

14. It is easy to use my remote control to go back or forward or pause on a subtitle that I want to read carefully.
Strongly Agree / Agree / Disagree / Strongly Disagree

15. It is easy to use my computer mouse and keyboard to go back to a subtitle and pause on the subtitle so I can read it more carefully.
Strongly Agree / Agree / Disagree / Strongly Disagree

16. I would like to be able to go forward or backward through the film more easily (e.g., frame by frame).
Strongly Agree / Agree / Disagree / Strongly Disagree

17. I find the English subtitles helpful in understanding the movie.
Strongly Agree / Agree / Disagree / Strongly Disagree

18. I find the English subtitles helpful in learning English.
Strongly Agree / Agree / Disagree / Strongly Disagree

19. If my DVD player included an electronic dictionary so I could easily access definitions and/or translations of unknown words while watching the movie, I would use it.
Strongly Agree / Agree / Disagree / Strongly Disagree

20. If my DVD player allowed me to click a button and save new words in the subtitles (for later review), I would use it.
Strongly Agree / Agree / Disagree / Strongly Disagree

Finally, if you feel your DVD player could be improved in any way that would help you to understand and/or learn English, please describe these improvements below:

Figure 1. *L1* Player Screen

File   View   Quiz   DVD   THE LORD OF THE RINGS

QUIZ   SESSION DETAILS   SUBTITLES ON/OFF   DICTIONARY

LANGUAGE ONE

Figure 2. *L1* Study Mode Screen

File   View   Quiz   DVD

THE LORD OF THE RINGS

MOVIE

+ Remember For Quiz
+ Translation
+ Grammer
+ Save in Session
+ More Entries

USER INFORMATION: Dr. Steve Bird (Acc. #7683)
SEARCH COUNT FOR: WIZARD
THIS SESSION: 1
PREVIOUS MOVIES: 0
POINT IN MOVIE: 124:41

LANGUAGE ONE

SELECTED SUBTITLES   Be wary of the evil wizard, Saruman!

WORDS   Be   wary   of   the   evil   wizard   ,   Saruman

wizard

wizard

noun

1 a person who is believed to have magical powers

2 person who is especially good at something
A computer wizard.

6 Supporting Grammar Teaching Through Web-based Questionnaires

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The consciousness-raising approach to grammar teaching suggests that students should first be exposed to some 'noticing activities' so that they are able to identify some grammatical components embedded in the materials. Students may then attempt to make their own generalizations or hypotheses about those components. However, what students actually master and acquire through those activities might not be what we expect them to in terms of both quality and quantity. It is thus necessary to provide students with a platform through which they can practise their interlanguage (Selinker, 1972) and test and refine their hypotheses in order to internalize the grammar rule(s) (Batstone, 1995). This paper aims to report the benefits of using the web-based questionnaire tool of WebCT in the author's English Proficiency Course for undergraduates. After each class, students were required to complete an online questionnaire comprising both multiple choice and short-answer questions as a follow-up to the 'noticing activities'. There were three main benefits of using the online questionnaire. The first one was that students were, to some extent, motivated to apply what they had observed. Questioning creates and maintains intrinsic interest because "questions open up knowledge; they arouse and maintain curiosity" (Biggs and Watkins, 1995:91). In due course, curiosity motivates students to keep on testing and refining their hypotheses. The second benefit was that students participated in the activities of testing and refining their hypotheses more than in the past since all submissions were anonymous and this avoided unnecessary embarrassment. The last benefit was the collection of students' interlanguage output. From the students' perspective, they were exposed to more interlanguage samples that might have helped them refine their hypotheses. From the teacher's perspective, the questionnaire tool enabled the teacher to create, edit and maintain the questionnaires and summarize students' interlanguage output without much technical knowledge. Besides, the output allowed the teacher to identify the students' needs and to make adjustments to his or her teaching materials accordingly.

Introduction

Hedge (2002) states that grammar teaching is "substantially influenced by the input hypothesis and the notion of intake" (p. 146). There are several steps which constitute successful acquisition of grammar: (a) *noticing*, (b) *reasoning and hypothesizing*, (c) *structuring and restructuring*, and (d) *automatizing*. One simple way for teachers to ascertain if students have acquired a specific grammatical constituent is to ask students to use the targeted language to achieve some communicative purposes, e.g., asking for information. It is not uncommon to find that what students actually master and acquire is not what we expect them to in terms of both quality and quantity. Also, it is sometimes hard to motivate students to take part in both stages of *reasoning and hypothesizing*, and *structuring and restructuring*, especially in the second language classroom of Chinese learners, because of the 'face' system in Chinese culture. Students perceive making mistakes in front of the class as losing face, yet making mistakes in these stages is unavoidable. So, they prefer to remain silent.

This paper aims to report some benefits of the web-based questionnaire tool of WebCT when it was used in the author's English Proficiency Course for undergraduates. In the first part, the role that the questionnaire tool played in both previously mentioned stages will be discussed. In the second part, the focus moves to studying how the tool motivated students, especially those low achievers, in terms of achievement motivation (Biggs & Watkins, 1995). Finally, student perceptions about this new mode of learning will be examined.

Approaches to grammar teaching

This section is divided into two parts. The first part discusses the integration of the product and the process perspectives of grammar teaching. The second part introduces the three main domains in grammar teaching, as proposed by the author.

■ **Integration of product and process perspectives**

The Presentation, Practice and Production (or the PPP) model, a type of grammar teaching of the product perspective emphasizing correct language forms and structures of the targeted language, has been criticized because of some of its assumptions of language and language learning (e.g., Lewis, 1993; Scrivener, 1996; Woodward, 1993). The process perspective, focusing on the use of language by the learner, has also been questioned because the accuracy issue is not well addressed. Since both approaches have their own benefits and shortcomings, Batstone (1995) thus integrates the two perspectives into his proposed model called "teaching grammar as skill". The model is said to "help learners make the leap from the careful control of grammar, while working on tasks which retain an emphasis on language use" (p. 53).

In his model, there are three key phases, namely *noticing*, *structuring* and *proceduralization* (Batstone, 1995: 44). Instead of deductively showing students linguistic features of the targeted language, the noticing phase adopts an inductive approach, which encourages students to work out the features on their own. Lewis

(1996) proposes another inductive paradigm called *Observe—Hypothesize—Experiment*. A similar paradigm of Lewis can be seen in the III model of McCarthy and Carter (1995). Hedge (2002) treats 'structuring' and "hypothesizing' as two different stages in his four-stage model as follows: (a) *noticing*, (b) *reasoning and hypothesizing*, (c) *structuring and restructuring*, and (d) *automatizing*.

■ **The three domains**

All models, as shown in the preceding section, seem to share some ideas in common and can be categorized into three main domains, which the author terms: *Exploring*, *Learning & Acquiring Cycle* and *Internalizing* as shown in Figure 1.

Figure 1   The three domains of grammar teaching

Models	Step 1	Step 2 Step 3 Step 2 (in 3-step models)		Step 4 Step 3 (in 3-step models)
Batstone (1995)	Noticing	Structuring		Proceduralization
McCarthy and Carter (1995)	Illustration	Interaction		Induction
Lewis (1996)	Observing	Hypothesizing, Experimenting		
Hedge (2002)	Noticing	Reasoning & Hypothesizing	Structuring & Restructuring	Automating
	↓	↓		↓
Domains	Exploring	Learning & Acquiring Cycle		Internalizing

The exploring domain
Unlike the deductive perspective which shows grammatical constituents to students explicitly, this domain adopts the inductive perspective that the role of the teacher is to provide language data for students to work out the grammatical patterns on their own. This can be conducted as individual, pair or group work. This approach is similar to that of the consciousness-raising method.

The learning and acquiring cycle
There is a distinction between acquiring and learning a language. According to the Acquisition/Learning Hypothesis of the Natural Approach proposed by Krashen (1982), acquisition is an unconscious process in which language proficiency is achieved by understanding language and using language for meaningful communication. On the other hand, learning is a conscious process, which emphasizes "explicit"knowledge about the forms of a language and the ability to verbalize this knowledge" (Richards & Rodgers, 1994: 131). So, there is no causal relationship between learning and acquisition, i.e., acquisition is not a result of learning. However, Harmer (2001) criticizes Krashen's claim that it is difficult to

conclude whether it is the result of either 'learning' or 'acquisition' if someone is able to produce language. Also, it is questionable to suggest that "learnt language can never pass to the acquired store" (p. 72). Thornbury (2000) also argues that "the learner's role is perhaps less passive than Krashen implies, and that acquisition involves conscious processes, of which the most fundamental is attention" (p. 24). Having noticed the language items may help learners acquire the items.

The second domain, which the author calls "learning and acquiring cycle", encapsulates the steps that follow the noticing activities. These include structuring (Batstone, 1995), interaction (McCarthy & Carter, 1995), hypothesizing (Lewis, 1996), and reasoning and hypothesizing, and structuring and restructuring (Hedge, 2002) activities from the different models in Figure 1. In other words, all activities aim to help learners generalize what they have observed in the 'noticing' or 'observing' activities of the first domain, and modify their generalizations. The term 'cycle' represents the complex and re-occurring process of generalizing and modifying hypotheses in the learners' mind.

The internalizing domain

Once learners have gone through the learning and acquiring cycle to produce language items which are compatible with the ones produced by native speakers, learners are deemed to have internalized the targeted language items. Alternatively, this could simply be the case that they can use the language to achieve a communicative purpose effectively.

Design of This Study

This section is divided into two parts. The first part describes the six parameters of lesson planning suggested by Eisenstein (1987) and explains how they are incorporated in the in-class and outside-classroom activities of this study, which fall into three different stages. The second part discusses the role of the questionnaire tool of WebCT in this study.

■ The Lesson plan

Eisenstein (1987) states the importance of considering learners' backgrounds and needs when making pedagogical decisions about grammar instruction. The following parameters proposed by Eisenstein were taken into consideration when the author designed his lesson plan. The lesson plan, in addition to the activities conducted during the class, included some pre-class and post-class activities.

Eisenstein's parameters

The first parameter is *explicit grammatical explanations*. Since the students were advanced learners who had learnt English for some 13 years, the method of *conscious grammatical explanations*, according to Eisenstein's model, was adopted. The second one is *isolation of grammatical rules*. Eisenstein believes that learners may find conscious statements of grammatical rules and structures useful because explicit language knowledge, as suggested by Ellis (1990), helps learners to be exposed to

specific linguistic features during the instruction input, and this will eventually lead to the incorporation of the elements into the targeted language.

A combination of *inductive and deductive presentations* of grammar points, the third of Eisenstein's parameters, was adopted by the teacher. An inductive presentation was given at the beginning of the lesson to help students recall the generalizations that they made in home preparation. Deductive presentations were used to explain the errors students made on the online questionnaire and to sum up the key grammatical concepts at the end of each class. The fourth was *the rule explainer*, which emphasizes the opportunity for students to state the rule. This parameter was found problematic by the teacher because in some cases, students were reluctant to contribute. This could be explained by the fact that students did not want to lose face in front of other students.

Use of grammatical terms was the fifth parameter. The use of grammatical terms or terminologies enables students to explain concepts more easily. However, the students were not so proficient in English. Grammatical terms were used but the use was kept minimal in order not to confuse them. The final parameter was *the medium of explanation*. An answer key with detailed written explanations of the grammatical concepts of a unit was distributed to students at the end of each lesson, to supplement the spoken explanations given by the teacher during class.

In the course, students were given a set of course books consisting of 11 units, which touched on the errors that students frequently made according to a needs analysis. There were three stages to completing each unit. First of all, before going to class, students were required to do some preparation at home. Then, during the class (i.e. stage 2), the teacher discussed the key concepts with students. After class (i.e. stage 3), students were asked to complete a web-based questionnaire before attending the class the following week. The following week, the teacher went over the questionnaire by drawing students' attention to the survey result and asking students to comment on it. Table 1 (on page 70) gives an overview of the tasks and their purposes in each of the three stages.

Pre-class stage

Before going to class, students were expected to go through a specified unit on their own at home. In each unit, there were several parts. Each part consisted of some language data or examples, and students were asked to make some generalizations before moving on to the next part (i.e. *the inductive presentation*). This is a kind of scaffolding activity to help students build their knowledge on what they had learnt in the past and on what they had noticed in the previous activity.

During class stage

There were three main class activities, namely *Review of survey results*, *Group presentation* and *Class discussion* (except for the first class, where the first activity was absent). The *Review of survey results* phase aimed to revisit the questions posted on the web-based questionnaire and discuss some key grammatical components. The teacher showed the results of the questionnaire, consisting of both 'multiple

Table 1	Tasks and purposes in the three stages of the lesson plan
Stages	**Tasks**
1. Pre-class (Home preparation) Purposes: (i) To expose students to language input through noticing activities (ii) To help students formulate generalizations on some language patterns on their own	Before going to class, every student was expected to: 1.1 Study the language input (i.e. examples) and 1.2 Complete questions in each part of a unit Members of a presentation group, in addition to the above tasks, were required to: 1.3 Describe and discuss some grammatical components mentioned in a unit that they thought useful and relevant to their interest and competence level 1.4 Relate the grammatical concept to real examples as much as they could
2. During class Purposes: (i) To revisit what students learnt in the previous unit (ii) To offer opportunities for students to use metalanguage to discuss language problems with others (iii) To let students (i.e. presentation group members) present their generalizations in front of a class (iv) To allow students to learn from others, in addition to the teacher (v) To isolate grammatical rules for the sake of students' easy understanding (vi) To give explicit grammatical explanations to students (vii) To use explicit grammatical terms to help students refine their generalizations	In Review of survey results, the teacher 2.1 showed students the survey results (from the online questionnaire) 2.2 asked students to comment on the results 2.3 asked students to work in groups or pairs for discussion The students were expected to: 2.4 spot and correct the errors 2.5 explain the errors by using metalanguage as much as possible In Group presentation 2.6 members of the presentation group performed the tasks shown in 1.3 & 1.4 above 2.7 the teacher acted as a facilitator only In Class discussion, the teacher 2.8 highlighted key grammatical concepts of a unit by using grammatical terms explicitly 2.9 gave a preview of the questions on the online questionnaire that students needed to complete after class
3. Post-class Purposes: (i) To test students' grammatical knowledge (ii) To allow students to produce interlanguage output (iii) To obtain interlanguage input for analysis and discussion in tasks 2.1—2.5	3.1 After class, students were required to complete an online questionnaire

choice' and "short answer' question types, to students via the 'survey result' function of WebCT, followed by eliciting students' comments on them. In some cases, the teacher asked students to work in groups or pairs to correct the errors collected by

the teacher from the questionnaire. This activity lasted for 10-15 minutes and fulfilled the first two parameters of *explicit grammatical explanations* and *isolation of grammatical rules*, and the fifth parameter of *use of grammatical terms*.

Following this activity was a group presentation. A group of four to five students gave a 10-15 minute presentation on the key concepts taken from the course book that they thought important and relevant to other students. In addition to this, students were encouraged to supplement their presentations with authentic examples, e.g. ICQ messages. This practice followed the fourth parameter of *the rule explainer*.

Finally, class discussion included highlighting key grammatical concepts covered in a unit, offering *explicit grammar explanations* to help students internalize the grammatical concepts because the practice of giving explicit grammar explanations is suitable for advanced learners. Also, this activity allowed students to structure their grammatical knowledge systematically through *the use of grammatical terms*.

Post-class stage

After each lesson, the teacher posted some questions onto the web-based questionnaire, which were related to the rules that students learnt in class. The questions tested students' grammatical knowledge by asking them to apply the knowledge in some situational context. At the same time, the answers that students gave, which were the output of their interlanguage, the rules and structures that students create for themselves (Selinker, 1972), became the input for analysis and discussion in the lesson that followed.

■ **Role of the web-based questionnaire tool**

As mentioned in the previous section, one problem the author encountered was that students were reluctant to speak up in class to practise their interlanguage because mistakes were inevitably unavoidable and this made them lose face. As a result, they were unable to test and refine their hypotheses for their interlanguage. However, making mistakes, as Cook (2001) rightly points out, is a natural part of the learning process.

Having this constraint in mind, the author introduced the use of web-based questionnaires to overcome this problem. The question types used in this study comprised both multiple-choice and short-answer. All questionnaires were created, maintained and managed by the questionnaire function of WebCT. WebCT was an online learning environment and so students could gain access to it at home or in the university, provided that their computers were connected to the Internet. In addition, it did not require any technical knowledge to operate the questionnaire function. Therefore, the teacher could create, edit, maintain the questionnaire, and generate a result report without difficulty. The platform allowed the teacher to post challenging questions as a follow-up to the 'noticing activities' in class, so that students could use the questions to test and refine their hypotheses. Since their identity remained anonymous in the result report, students did not lose face in

front of their classmates, even when they made mistakes in the questionnaire.

Discussion

The first part of this section aims to report the three main benefits of using web-based questionnaires to support grammar teaching. Student perception and participation will be analyzed in the second part.

■ Benefits of the tool

In this section, the author highlights three main benefits of using web-based questionnaires to support his grammar teaching: student motivation, expectation of success and collection of authentic interlanguage output. Questions of Unit 4 of the course are used for illustration purposes.

Student motivation

The major benefit was that students were motivated to apply what they had observed because, as suggested by Biggs and Watkins (1995: 91), intrinsic interest is created and maintained by questioning since "questions open up knowledge; they arouse and maintain curiosity". The author believes that questioning created curiosity, and this eventually motivated students to keep on formulating, testing and refining their hypotheses. For example, in Unit 4, the author asked students three multiple-choice questions (see Appendix 1) and one open-ended question as follows:

> **Q4:** Why are there three, not four, types of conditional sentences, which are 'PRESENT-REAL', 'PRESENT-UNREAL', and 'PAST-UNREAL'. Why is 'PAST-REAL' missing? How do we express the 'PAST-REAL' situation?

After the lesson, some students submitted their views as shown in Table 2. They gave different types of responses or hypotheses.

Another benefit was that students, especially those low achievers, were encouraged or motivated to participate in the discussion since all submissions were anonymous and avoided unnecessary embarrassment. Thus, the issue of losing face in the Chinese culture was overcome. This is something that would be impossible in traditional face-to-face in-class discussions. Besides, from the teacher's perspective, this collaborative learning mode summarized students' views collectively, allowing the teacher to realize students' needs and to make adjustments to his or her teaching materials accordingly (see Table 3 for a detailed statistics summary).

Expectation of success

The second benefit is that student expectation of success can be increased. According to the expectancy value theory of motivation (Biggs & Watkins, 1995: 83), students will participate in an activity if they perceive the value behind it and if they can expect success. Some methods were used to help students realize the value of participating in the online questionnaire activities. First of all, in terms of extrinsic motivation, students were encouraged to apply what they had learnt from lessons

Table 2 Student responses on Question 4 of Unit 4

User ID	Response
1	The 'Past-Real' situation is impossible because when we say that ' if i went to the ball, i will call u' that means it is impossible to go the ball.
2	It is difficult to say that the possible event will occur later in the past. The past-real situation can be expressed to something are possible occur in the past after the previous event happened, but it is not sure that it is really happened.
3	I think 'PAST-REAL' has the same meaning of 'Simple Past', so the sentence sould express this way: "I went to the ball with you."
4	there is no past-real form in tence struction
6	Mary went to the ball with Paul last night.
7	If the past real exist, e.g. If I went to school last night. you would......so this has changed to "past unreal". The past real is missing, becaus the things happened in the past has been a fact which you can't change.
8	use past tense only
9	The Past-real formation cannot be show in conditional sentence, for the thing happened actually in the past and needn't to suppose something, so in my opinion, past -real is just the same as past tense sentence.
11	If I had gone to the ball, I would call you last night.
12	....
13	People will use simple past tense to discribe the past real action
14	is it the "past-real" isa fact not conditional?
15	If (present tense), (present tense).
17	It is impossible to have PAST-REAL situation because the past become the fact that must be true or you are going to tell lie.
18	because past things can't change anytime!
20	'PAST REAL' is missing because if something happened, no need to use contional senctence to assume it. Use simple past tense to express the 'PAST REAL' situation.

Table 3 Detailed statistics summary: Unit 4

Title	N	Frequency					Mean	SD	Median	Mode
		–	a	b	c	d				
Unit 4: Q1	21	0	3	10	7	1	2.29	0.78	2.0	2
Unit 4: Q2	21	0	1	5	5	10	3.14	0.96	3.0	4
Unit 4: Q3	21	0	1	2	1	17	3.62	0.86	4.0	4

d

and the course book so that they could ascertain whether they had grasped the ideas or not. If they had been unable to do so, they might have had to repeat the course in the second semester. In terms of intrinsic motivation, apart from arousing students' curiosity in the ways mentioned in the previous section, students would also have expected to improve their English language level to meet their academic needs. This could also strengthen their instrumental motivation or "learning the language for a career goal or other practical reason" and integrative motivation or "learning the language in order to take part in the culture of its people" (Cook, 2001: 114).

In order to help students become intrinsically motivated, it was necessary to ensure that the difficulty level of the tasks was appropriate for the students. The author admits that this was not an easy task. One criterion that was taken into consideration was to observe the concept of 'positive intrinsic motivation' (Biggs & Watkins, 1995: 95), which is to ensure that there is a mixture of familiar and unfamiliar tasks so that curiosity can contribute to challenging and motivating tasks for students. In the examples taken from unit 4, the familiar task was to ask students what the three types of conditional sentences were. The author deliberately did not cover the unfamiliar one in class because that type of conditional sentence does not exist in English. Through the tasks, students were challenged and asked to build on what they had already learnt in order to answer the teacher's questions.

Student response, as revealed from Table 2, showed that the task was not too difficult because some students were able to answer the questions by referring to their previous knowledge. For example, some explained that there was no 'past-real' conditional sentence because the past tense should be used instead. This kind of building 'new things' on 'old things' is an example of scaffolding in the constructivist mode of learning, which is highly promoted in tertiary education.

Collection of authentic interlanguage output
The third benefit is collection of authentic interlanguage output of the learners. Learners' output on the web-based questionnaires became the language input (or data) to be used for discussion in class (i.e. Tasks 2.1-2.5 in Table 1). This output revealed the competency level of the grammatical knowledge of not just a limited number of students (as results from the traditional practice of asking students to answer questions individually), but of a relatively larger number of students or even the whole class, provided that they all completed the questionnaire before going to class.

As Cook (2001) states that learners' sentences are reflections of their temporary language systems, when we view the output positively, there are two projected advantages. From the teacher's perspective, the teacher can identify the problems that students encounter and the difficulty level of the tasks from the statistics summary in Table 3. This helps the teacher design the material for the sessions that follow. From the student's perspective, through the teacher showing the summary report at a glance, students can distinguish the errors made by their classmates. Since their classmates are of a similar competency level, students then

feel that they are not the only ones who have the problems and this helps them not to feel inferior psychologically. Also, the class discussion between classmates themselves, and between students and the teacher may expose students to more 'interlanguage input' for them to refine their own interlanguage. Eventually, it is hoped that students will not make similar errors in the future.

■ **Student participation and perception**

This part aims to report the frequency of student participation in the online questionnaire activities. There were some 46 students enrolled in the author's classes and 38 of them answered the evaluation questionnaire (see Appendix 2), which was distributed in the last session of the course. Among those 38 subjects, nearly 90% of them completed at least one questionnaire activity (there was one questionnaire activity per unit). Slightly less than one-fifth (16%) of the subjects were active participants, having completed 5 questionnaire activities or more (see Table 4).

Table 4 Distribution of frequency of participation

Frequency of option	Cases	%
5 times or more	6	16
3–4 times	14	37
1–2 times	14	37
Never	4	11
Total	**38**	**100**

Over 80% of the subjects found that the use of online questionnaires had stimulated their interest in learning grammar (84%), allowed them to reflect on what they had learnt during the class (89%), and allowed them to deepen their understanding of a particular grammar point (89%). Finally, a majority of subjects found that the questions were challenging (78%), and that the difficulty level of the questions was appropriate (83%). Ultimately, they recommended that this mode of teaching and learning should be promoted in the future (89%). (For details of reasons for taking part or not taking part in completing the questionnaires, please refer to Appendix 3).

Conclusion

The author used the questionnaire function of WebCT to create several online questionnaires, through which students could freely observe and regulate their hypotheses on grammatical constituents covered in the course book. More importantly, from the students' perspective, they did not lose face if they got wrong answers during what the author calls the 'learning and acquiring cycle'. When discussing the interlanguage output extracted from the questionnaires in the class, students were able to refine their hypotheses at the same time. From the teacher's

perspective, the teacher was able to keep track of what students learnt and to modify the teaching materials and pace of the class accordingly. Finally, the results showed that the use of online questionnaires had motivated the students' interest in learning grammar. In addition to this, most students found that the difficulty level was appropriate, and the questions were challenging. Therefore, they recommended that this mode of teaching and learning should be promoted in the future.

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APPENDIX A: Sample Questions in Unit 4

Question 1

Mary met Paul at the podium in the morning and said, "If I go to the ball, I will call you tonight."

- ☐ a. Mary has called Paul that she will go to the ball with him.
- ☐ b. Mary has not yet called Paul but she may go to the ball with him.
- ☐ c. It is not sure if Mary has called Paul or not but she may go to the ball with him.
- ☐ d. It is certain that Mary will not go to the ball with Paul.

Question 2

Mary met Paul at the podium in the morning and said, "If I went to the ball, I would call you tonight."

- ☐ a. Mary has called Paul that she will go to the ball with him.
- ☐ b. Mary has not yet called Paul but she may go to the ball with him.
- ☐ c. It is not sure if Mary has called Paul or not but she may go to the ball with him.
- ☐ d. It is certain that Mary will not go to the ball with Paul.

Question 3

Mary met Paul at the podium in the morning and said, "If I had gone to the ball, I would have called you last night"

- ☐ a. Mary called Paul that she would go to the ball with him last night.
- ☐ b. Mary did not call Paul but she went to the ball with him last night.
- ☐ c. It was not sure if Mary called Paul or not but she went to the ball with him last night.
- ☐ d. It was certain that Mary did not go to the ball with Paul.

Question 4

As you can see from the powerpoint, there are three types of conditional sentences, which are 'PRESENT-REAL', 'PRESENT-UNREAL', and 'PAST-UNREAL'. Why 'PAST-REAL' is missing? How do we express the 'PAST-REAL' situation?

_____

_____

_____

_____

_____

APPENDIX B: Evaluation Questionnaire

Using an Online Survey to Discuss Grammar Points

Name: _____   Section: _____

	5 times or more	3-4 times	1-2 times	Never
1. Have you participated in the survey?	**Go to Q3**			*(Go to Q2)*

2. The reason(s) for not taking part in the survey:

_____

_____

_____

3. The reason(s) for taking part in the survey:

_____

_____

_____

	Strongly Agree	Agree	Disagree	Strongly Disagree
4. This mode of interaction (using a survey form) has motivated my interest to learn grammar.	_____	_____	_____	_____
5. This mode of interaction has facilitated my learning after the class time.	_____	_____	_____	_____
6. This mode of interaction allows me to reflect what I have learnt during the class.	_____	_____	_____	_____
7. This mode of interaction allows me to deepen my understanding of a particular grammar point.	_____	_____	_____	_____
8. This mode of interaction enables me to learn from others (e.g. through the survey results).	_____	_____	_____	_____
9. The instructor has given enough explanations on students' postings.	_____	_____	_____	_____
10. The questions are challenging.	_____	_____	_____	_____
11. The difficulty level of questions is appropriate.	_____	_____	_____	_____
12. In short, I will recommend that this mode of teaching and learning should be promoted in the coming year.	_____	_____	_____	_____

Question 2: The reason(s) for not taking part in the survey
34. Give opinion
32. I have forgotten to do
31. I forgot to take the survey
30. not convenient
27. don't know the correct answer with explanation instantly
22. too details to answer
17. coz I am busy and lazy
13. lazy
7. I am lazy
4. no time
2. I was too busy to participate all

Question 3: The reason(s) for taking part in the survey
38. Test myself
37. Have a self test
36. Have a self-test
35. useful
33. test myself
32. it is useful and interesting
31. It is useful to understand the materials
29. Training my grammatical skill and doing some exercise about the related units
28. clear concept of grammar / challenging
23. follow the tutor instruction
21. express my points
20. the questions [are] interesting
19. When I have time, I will do it
18. have to do so
17. it is good
16. I think it is useful and helpful by more familiar to the topic. The examples are close enough for our common error.
15. to use what I learned from the section
14. take more practise
12. it must be useful
11. interesting
10. interesting
9. checking my understanding
5. can help to improve
4. useful
3. I want to do some practise
1. finish homework

Note: Numbers in front of the comment denote the subject serial nos, not frequency.

7 Of the Students, By the Students, From the Students

An evaluation of peer teaching by students in a business writing programme

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Large-group lectures, though a common pedagogic method used to impart contents of any discipline in institutions of higher learning, usually reduce students' role to one that is passive and provides limited opportunities for interaction. In addition, how much students learn has always been a matter of concern. It was in response to the weaknesses of large-group lectures that the idea of having mini-lectures with smaller groups of students was mooted. In a nutshell, the 'mini-lectures' methodology requires students, in groups to take turns in taking on the challenging task of teaching. The 'mini-lectures' are designed to improve the effectiveness of students' learning; foster learner autonomy; encourage collaborative learning; promote active learning; increase students' motivation; and give students practice in oral presentation skills. The purpose of this study is to evaluate the usefulness of the''mini-lectures' methodology and to identify its shortcomings. Two questionnaires were distributed to five tutors who taught the Business Writing course and the 175 second-year Business students enrolled in the course. Specifically, the questionnaires focused on the effectiveness of the mini-lectures; the difficulty or ease of preparation; the usefulness of the resources; students' personal reactions, perceptions and suggestions for improvement; and tutors' key considerations when implementing the methodology. Results of the study show that the mini-lectures are indeed beneficial and effective. This mode of teaching-learning should continue and could perhaps be considered by other educators.

Introduction

The idea of having mini-lectures came about in response to a number of concerns pertaining to the effectiveness of large-group lectures which is a common pedagogic method used in institutions of higher learning. First, large-group lectures as a teaching method usually reduce the students' role to one that is passive and provide little opportunity for interaction. As noted by Grasha (1972) cited in Whitman (1988: 46), "in large lecture courses students are forced to be passive, producing apathy,

absenteeism and poor performance". In addition, how much students actually learn from large-group lectures has always been a matter of concern. As opposed to large-group lectures during which the teacher presents on a subject matter to large groups of students, the mini-lectures are conducted with smaller groups of students in the context of a tutorial and are usually of shorter duration, hence the term 'mini-lectures'. In addition, a key feature of this new methodology is that the students are the ones who conduct the lectures, instead of the teachers. Working in teams within the smaller tutorial groups, the students took turns to assume the role of the teacher in taking on the challenging task of explaining key concepts and principles of selected topics to their peers to aid their understanding of those topics. As such, students are more actively involved in the learning process compared to the large-group lecture situation. The study will show that this teaching methodology is very positively perceived by the students and can yield huge benefits for the learning of targeted materials.

■ Features of the 'mini-lectures' methodology

The 'mini-lectures' methodology was implemented in the academic year 2001-2002 when the ES2002 Business Writing course was first offered at the NUS School of Business. In discussing the effectiveness of the mini-lectures as a teaching-learning methodology, it is necessary to outline its specific features, the first two of which have already been mentioned:

- large-group teaching was replaced by small-group teaching;
- the students worked in teams and took turns to assume the role of the tutor in teaching their peers about different topics on the course;
- the tutor defined the scope of the mini-lectures and allocated the time to be spent on each mini-lecture;
- the students' task was made manageable by providing them with notes on the assigned topic as well as accompanying PowerPoint (PPT) slides accessible on the course website;
- the students were given pointers on how to prepare and deliver oral presentations early in the course so that they could put what they had learnt into practice in delivering their mini-lectures;
- the mini-lectures served as oral presentation practice for the students' major presentation scheduled in the later part of the course; and
- the students' performance on the mini-lectures was taken into account in the tutor's assessment of their class participation component of the continual assessment.

■ Literature review

Wagner (1987) sees the ability to communicate clearly about matters unknown to others as the real test of academic excellence. In having to explain new principles and concepts to their peers, the peer teacher is forced to gain a deeper insight into the subject to be taught. With the mini-lectures, students are posed with the challenging task of teaching an important topic to their peers, who constitute an

audience that has limited or no knowledge of the subject matter. Gartner, Kohler, and Riessmann (1971) emphasize a number of cognitive processes that usually occur in preparation for teaching. Firstly, the teacher must review the material and in doing so the teacher grasps it more fully or deeply. Secondly, the teacher may need to seek out examples and illustrations to help explain the material. Consequently, the teacher gains a better understanding of the subject to be taught. The saying "He who teaches others teaches himself" is very true indeed. Riessmann (1965: 30) reinforces this idea when he writes that, "there is nothing like learning through teaching. By having to explain something to someone else, one's attention is focused more sharply".

In Glassman (1980: 31), "... one teacher notes, "I realized when I lectured I was the one who learned most. I was the one whose thinking skills were enhanced and whose creativity was stimulated. I played the active learner role; the student's role was passive.'" Being actively engaged in the teacher's role in delivering the mini-lectures, students will be able to reap the benefits mentioned earlier. Bonwell and Sutherland (1996: 4) echoed the same view by stressing that "[s]tudents are simply more likely to internalize, understand, and remember material learned through active engagement in the learning process."

In addition, the 'mini-lectures' methodology has the potential of fostering learner autonomy, an important goal of higher education. With the mini-lectures, as students assume the role of the teacher, they have to become more involved in their own learning and inevitably take on a much more active role as they are forced to take greater responsibility for their own learning. Scharle and Szabo (2000) make a pertinent point in postulating that learner autonomy can really only develop if teachers allow more room for learner involvement. Sinclair (2000) highlights that promoting learner autonomy is a matter of empowering learners so that they are better able to take on more responsibility for their own learning than before and become better at learning in the long run.

The mini-lectures also require students to work collaboratively in a team. This is in line with the growing importance of teamwork in today's working world. Teamwork, which involves getting others to cooperate, leading others, coping with complex issues of power and influence, and helping solve people's problems by working with them, forms the heart of most jobs as noted by Johnson, Johnson, and Smith (1991). In underlining the importance of cooperation, Slavin (1985: 5) states:

> [I]n modern society, cooperation in face-to-face groups is increasingly important ... if the participants cannot cooperate to achieve a common goal, all lose out. It is difficult to think of many adult activities in which the ability to cooperate with others is not important.

Recognizing that teamwork, communication, effective coordination, and division of labor characterize most real-life settings, Johnson, Johnson, and Smith (1991) call out to schools to more realistically reflect the realities of adult life. Johnson and Johnson Chickering and Gamson (1987) provide further support

to the benefit of cooperative learning. According to them (Chickering & Gamson, 1987: 4),

> Learning is enhanced when it is more like a team effort than a solo race. Good learning, like good work, is collaborative and social, not competitive and isolated. Working with others often increases involvement in learning. Sharing one's ideas and responding to others' reactions improves thinking and deepens understanding.

■ **Goals of mini-lectures**

In the *Preliminary Findings of the Committee to Review the University Sector and Graduate Manpower Planning*, (2002: 6), it was noted that 'our universities must rise to the task of preparing graduates for a working environment that is increasingly more dynamic and more demanding of graduates' ability to adapt, innovate and add value.' With the mini-lectures, it is hoped that students will learn to work independently, yet cooperatively, and become more effective communicators in articulating their ideas clearly to an intended audience, and become better at learning to enable them to easily adapt to a continually changing working environment. These are the long-term goals of the new methodology.

In terms of its short-term goals, it is believed that the 'mini-lectures' methodology which incorporates peer teaching will lead students to understand and retain the materials more effectively as students are required to actively participate in the learning process. In addition, it is believed that the methodology will lead students to become not only more independent but also more motivated when they have to assume the role of the teacher in contributing to their peers' understanding of a given topic. Requiring students to deliver the mini-lectures in their teams also paves the way for collaborative learning to take place, harnessing teamworking skills in the process. In essence, the 'mini-lectures' methodology aims to improve the effectiveness of students' learning; foster learner autonomy; encourage both independent and collaborative learning; promote active learning; increase students' motivation; and give the students practice in oral presentation skills.

■ **Purpose of study**

The purpose of this study is to evaluate the effectiveness of the 'mini-lectures' methodology in achieving the aims articulated earlier and to identify its shortcomings to improve its future implementation.

Research Methodology

The study was carried out in the second semester of the academic year 2001-2002, after the students had all gone through the experience of delivering mini-lectures to their tutorial mates as well as listening to the mini-lectures given by their peers.

To gather the required data for the study, two separate questionnaires were prepared, one for students and one for tutors. The students' questionnaire includes questions which ask for their views about the mini-lectures both as presenters and listeners as well as any suggestions or comments they might have. Most of the

questions in the questionnaire provide options for students to offer their own comments as they are designed to solicit the students' direct feedback. The majority of the students provided comments to the open-ended questions, indicating their openness to the survey and readiness to offer feedback. The tutors' questionnaire asks tutors about their views on students' capability in delivering effective lectures and the advantages and disadvantages of students giving mini-lectures, their main considerations when getting students to give mini-lectures, their perception of how well the objectives of the 'mini-lectures' methodology have been achieved, and their comments or suggestions for improvements. A copy of each questionnaire can be found in Appendix 1.

The students' questionnaire, which required about 10 to 15 minutes to complete, was administered in class, with the help of all the tutors teaching on the course. A total of 175 students from 15 tutorial groups completed the questionnaire. All 5 tutors on the course completed the tutors' questionnaire, which also took about 10 minutes to complete. For both sets of questionnaires, respondents' anonymity was maintained to encourage more truthful and honest responses.

At the time the present study was carried out, the mini-lectures were confined to presentations on different aspects of report writing where students learn to (1) plan the report; (2) carry out the necessary research, including designing of suitable research tool(s); (3) analyse, evaluate and organise their data; and (4) draft the report. Four mini-lectures were set corresponding with the different phases of report writing mentioned earlier. The report writing component was chosen because it was a major and an important segment of the Business Writing course. Hence, it is more likely to result in students being interested in the given topic and having a higher motivation to learn it well. This is believed to be true for both the peer teachers and their audience which comprised the other students. The time allocated for each mini-lecture was 15 minutes and students in project teams of 3 had to distribute the teaching load as equally as possible among them. The class participation component on the course, which in part includes the assessment of students on their mini-lectures, makes up 25% of the continual assessment.

Findings and Discussion

The findings are divided into two main parts: (1) results from the students' survey; and (2) results from the tutors' survey. The findings from the students' survey will be discussed first.

■ **Results from students' survey**

Based on the survey results, students consider the mini-lectures an effective tool in teaching and learning. The autonomy they generates and the ownership students take on for their own learning are welcomed by the majority of them although it incurs more time than the usual passive learning adopted in the traditional lecture-by-tutor method. Most students noted the obvious benefits of mini-lectures while a few acknowledged their usefulness slightly reluctantly.

The findings are classified into the following areas: preparation of mini-lectures;

experience of delivering the lectures; benefits of mini-lectures; enjoyment of mini-lectures; continuation of mini-lectures; usefulness of resources; personal reactions and perceptions of mini-lectures and useful suggestions and comments.

The study seeks to ascertain what students think about their roles as presenters and listeners to ensure both perspectives are covered—students as the information givers and recipients. The opening question of the survey focuses on students as presenters and how they find their experience in preparing for and delivering the mini-lectures. Statements are provided so that students can indicate the degree to which they agree or disagree with the statements. In analyzing the data, the categories in "agree" and "strongly agree" are merged. Similarly, the data under "strongly disagree" are combined with "disagree". A summary of the results is found in Table 1, followed by a discussion of the pertinent areas. The focus of each statement is found in the italicized text at the end of each sentence, except for the last statement.

Table 1 Summary of survey results relating to presenting mini-lectures			
Survey questions	Strongly Disagree/ Disagree	Neutral	Strongly Agree/ Agree
Time consuming to prepare the mini-lectures (preparation)	37%	39%	23%
Delivering mini-lectures is nerve-wrecking (delivery)	44%	26%	30%
Mini-lectures are a good learning experience (benefits)	2%	10%	89%
Mini-lectures preparation encourages team-building (benefits)	4%	17%	79%
Mini-lectures give students a chance to practice their oral presentation skills (benefits)	1%	3%	97%
Preparing for mini-lectures forces students to read up more to understand the given topic so that they can present more confidently (benefits)	4%	20%	76%
Mini-lectures help students appreciate the task of teaching better	3%	33%	65%

Preparation of mini-lectures
One of the primary objectives of this survey is to find out how students feel about the preparation of the mini-lectures, i.e. if it is too tedious or time-consuming for them. Most students do not feel the preparation of mini-lectures takes up a lot of their time. From Table 1, it can be seen that more than one third of them (37%) do not think the preparation is time consuming while about the same number (39%) feel neutral about the preparation time taken. Only 23% consider it time-consuming to prepare the mini-lectures.

During the planning of the mini-lectures, the course designers did consider the students' workload. This was one of the key reasons for the provision of lecture notes and PPT slides. It would therefore seem unusual that the minority feel that the preparation for the mini-lectures is time-consuming. In contrast, a few "enthusiastic" students highlighted that they would welcome having more to do for the preparation of the mini-lectures. These are presumably the ones who would like to prepare their own PPT slides and even their own notes.

Experience of delivering the lectures
Though the students had to take on the challenging task of assuming the role of tutors in facilitating their peers' understanding of a topic about which the peer teachers themselves had limited or no knowledge, many students in this survey did not find the presentation nerve-wracking. This is a positive endorsement of the mini-lectures. 44% of the students are able to present their lectures without undue stress while 30% of them feel otherwise. The class size could be a contributing factor to the presenter's comfort level. An audience size of 8 to 13 is comfortable for most presenters. Another possible explanation is that the availability of notes and accompanying PowerPoint slides makes the task more manageable or less overwhelming for the students, when they are thrown into the unfamiliar position of having to teach.

Benefits of mini-lectures
From the survey results, it is evident that students know the benefits of mini-lectures. Firstly, they gave very positive ratings when asked to what extent they think mini-lectures provide a good learning experience. 89% of the students agreed that it was a worthwhile learning experience to present mini-lectures. Only 2% of the respondents did not think it was so. The high positive ratings could in part be due to the great importance students attribute to presentations as they are business students and are often required to present their cases to tutors or fellow students in many other modules that they are studying.

In addition, many students recognise the efficacy of mini-lecture preparation in the process of team-building. 78.9% of the students indicated that their team spirit was built from the moment they started their preparation for the mini-lectures. 7% of the respondents were neutral about this benefit while 4% disagreed that the mini-lecture preparation helped the team to bond.

Since one of the objectives of the mini-lectures is to give students practice in oral presentation, it is important to verify if the mini-lectures achieve this goal. 97% of the students agreed that mini-lectures gave them practice in oral presentation skills. Only one student did not think so and it is difficult to explain why given that this benefit of the mini-lectures was obvious.

In addition, the mini-lectures were planned to motivate students to read up on the given topic in order to become 'subject experts' so as to present the topic confidently and convincingly. Most students (76%) agreed that they had to do extra readings in order to have a good grasp of the subject. Only 4% of the respondents

did not agree that they were forced to read up on the topic.

Finally, while it is not directly related to the main objectives of the mini-lectures, students were also asked if the experience they gained through the mini-lectures made them appreciate the task of teaching better. The teachers found it encouraging that 64.5% gave a positive answer in comparison with a mere 3% giving a negative one.

Enjoyment of mini-lectures
On the whole, more students enjoyed mini-lectures than disliked them. 59% indicated they enjoyed it, 13% did not like it and 28% were neutral about this class activity. The reasons for the different reactions to mini-lectures are tabulated in Table 2.

Table 2 Reasons for students' various degrees of enjoyment of giving mini-lectures

Reasons for enjoying mini-lectures		Reasons for not enjoying mini-lectures		Reasons for feeling neutral about mini-lectures	
Gives us opportunities to learn presentation skills	24	Not at ease presenting, nerve-wracking	4	Pressurizing but manageable as notes are provided	8
Good for team building	22	Don't like presenting	4	Stressful yet beneficial	4
Learn more thoroughly about the topic through discussion	19	Demanding and time-consuming	3	Takes time but gain more understanding	3
Fun, innovative, interesting and interactive	15	Stressful, pressurising	1	It's another piece of work	3
Good learning experience	10	Don't feel involved with the group	1	Adds variety to the tutorials	2
Materials are useful thus making mini-lectures manageable	5	Don't learn much	1	Time consuming and don't like OP	2
Switching roles with tutor	5	Topic not within my interest interest	1	Pressurizing	1
Learning through teaching	5	Necessary evil	1	Enjoyable but stressful	1
Builds confidence	3			Time consuming but fun	1
Small group size helps	1			Necessary for shy people	1
				Understand the topic	1
				Builds team	1
				Good learning experience	1
				Time constraint is the main problem	1

The reasons for students endorsing mini-lectures relate mostly to the benefits of mini-lectures. In addition, students also find this an innovative and engaging form of learning. Some students thought it was fun as they were able to interact with their team members. They also gained a deeper understanding of the topic. Instead of passively listening to the tutor all the time during tutorials, the students experienced for themselves different types of presentation, strong and weak. Even

the students who were neutral about mini-lectures found it beneficial (4%) and one student mentioned it was necessary for shy ones.

The reasons for not enjoying mini-lectures also deserve some attention. The most cited reason concerns the students' discomfort with or dislike for presentation. Three students found it demanding while one student acknowledged that the mini-lectures are a "necessary evil".

In all, it does appear that students generally accept mini-lectures and very few are averse to them. The next section on whether students think mini-lectures should continue further emphasises the usefulness of this teaching-learning tool.

Continuation of mini-lectures
An overwhelming majority (93%) of the students felt that mini-lectures should continue. One hundred percent of the students who enjoyed the presentations thought that this mode of teaching-learning opportunity should carry on. In contrast, 7% stated that the mini-lectures should be cancelled, consisting of students who either did not enjoy or were neutral about mini-lectures. One student was not sure if this classroom activity should be continued. Nonetheless, 19 out of 23 students who did not enjoy mini-lectures thought that the mini-lectures should continue, and that underscores the effectiveness of the learning tool.

Next, it is useful for the curriculum designers to know why most students endorse mini-lectures. The fact that this group exercise provides opportunities to practise or improve students' presentation skills is clear to students, however, they feel about mini-lectures (see Table 3). Students also acknowledged that the mini-lectures are a good learning experience and that they enhance their understanding of the topic. This is understandable as they need to fully comprehend the contents they are presenting before they can communicate them to their listeners.

Giving mini-lectures is also considered a beneficial and useful team experience as students interact and build rapport with their team mates. A few students noted that it was especially beneficial when they had to start working together with one another directly after the commencement of classes. It served as a platform for early bonding. Through sharing of knowledge and discussion, many students found they gained more confidence in themselves and the topic.

Generally, the variety provided by mini-lectures in its deviation from the mass lectures conducted by a tutor and the different styles of various speakers make the class interesting and interactive. Some students welcome taking on the role of the tutor and that is significant for the tutors conducting this research. Three students who are neutral about mini-lectures find the practice useful as a preliminary to the final presentation which is graded. A few students also appreciated the evaluation and feedback given by tutors and classmates during mini-lectures (see Appendix 2 for comments by students).

As for the 7% of students who would like the mini-lectures cancelled, some of the reasons given related to tutor-centred teaching being perceived as more effective, the unhappiness felt with the weak presentations by their peers, and the mini-lectures being perceived as irrelevant and a waste of time in the development of

Table 3 Reasons for continuation of mini-lectures

Reasons for continuation of mini-lectures	Number of responses from students		
	Those who enjoy mini-lectures	Those who do not enjoy mini-lectures	Those who are neutral about mini-lectures
Opportunity to practise/ improve presentation skills	42	7	21
Good learning experience	14	3	8
Able to understand the topic better/learn more	11	1	4
Beneficial/useful	8	2	3
Interesting, fun, interactive, innovative	8	–	1
Different from/better than mass lectures	8	–	1
Builds/increase confidence	7	1	–
Builds team spirit	7	–	–
Opportunity to teach others	5	–	–
Receive useful evaluation and feedback	–	–	1

oral skills as there were many opportunities to present. However, these negative sentiments are far outweighed by the benefits acknowledged by the majority, as can be seen in Table 3.

Usefulness of resources

In order to make the mini-lecture task manageable for the students, resources in the form of course notes and accompanying PPT slides were made available. PPT slides were always accessible from the course website while course notes were given to the team presenting the mini-lecture only one week in advance. In addition, students were given pointers on how to prepare and deliver oral presentations in a lecture presented by the tutor. Thus, the lecture was scheduled in the first week of the course before the commencement of the mini-lectures.

Students were encouraged to do further research into the topic assigned and not "regurgitate" from notes. Consequently, many made the effort to make the lectures their own, largely by substituting some examples with their own and revising the PPT slides accordingly. A few students deleted content not thought to be very important and elaborated more on others, while a few others changed the organisation of the notes. All these are indicative of students exercising their autonomy and taking ownership of their own learning as well as of the cognitive benefits students gain from carrying out the teaching task.

Notwithstanding the need to read up further on the assigned topic to have a good grasp of it as well as the need to customize the mini-lectures, when students were asked to rate the usefulness of the resources and guidance given, the response was very positive.

As seen in Table 4 below, 98% of the students thought the notes were useful. In fact, close to 60% considered them very useful; only 4 students did not think so. When preparing the notes, the curriculum designers did make the effort to provide a clear and concise explanation of the topic. As for the PPT slides, 99.4% of the students noted they are useful; only 1 student did not think so.

The oral presentation lecture given by the tutor was rated as very useful by 96% of the students. While these students have done numerous presentations in the past, it should be noted that they have never had any formal training in oral presentation skills in their other courses. As such, many found the lecture useful.

Table 4 Rating of usefulness of resources provided

	Very useful	Useful	Not useful	No response
Notes	59%	39%	2%	
PPT slides	47%	53%	1%	
OP lecture given by tutor	34%	62%	3%	1%

Listeners' perception of mini-lectures
The study also seeks to find out how the mini-lectures were perceived by students in their role as members of the audience, listening to the mini-lectures being delivered by their tutorial mates. In the survey questionnaire, students were given options as shown in Table 5, with the possibility of choosing more than one option. The options comprise statements that are both positive and negative about the mini-lectures as indicated in the table below.

Table 5 Listeners' perception of mini-lectures

	Absolute numbers	Percentages
Mini-lectures are a waste of time **(-ve)**	5	3%
Mini-lectures are primarily a tutor's job **(-ve)**	22	13%
Mini-lectures are not beneficial as some students are ineffective speakers **(-ve)**	40	23%
Mini-lectures are interesting for the opportunity to learn from other classmates **(+ve)**	125	72%
Mini-lectures add variety by giving students a chance to listen to other people besides the tutor **(+ve)**	150	86%

As can be seen, the results provide further confirmation of the earlier findings. The majority of the students endorsed the positive statements about mini-lectures,

not the negative ones. More specifically, a high 86% of the students noted that the mini-lectures add variety as they get to listen to other presenters besides the tutor. Seventy-two percent also said that they find it interesting to learn from their tutorial mates. Only 13% of the students thought that giving lectures is primarily the tutor's job, an indication that the majority appreciate the opportunity to take on more responsibility for their own learning and are not resentful about assuming what used to be the tutor's responsibility in the traditional lecture-by-tutor method.

Students also appreciate the learning experience that this teaching-learning mode provides as only 3% considered mini-lectures a waste of time. A slightly higher percentage of students, at 23% of the sample population, thought that the mini-lectures were not beneficial due to ineffective speakers. This stemmed from their concern for not being able to understand the basic principles and concepts presented if speakers were to perform poorly in the mini-lectures. Though a valid concern, it should be noted that the remaining 77% of the students are not bothered by this, either indicating that they have confidence in their peers as well as in themselves or are assured that tutors are always at hand to provide clarification for any ambiguity.

Useful suggestions and comments

The survey also included an open-ended question where students were asked to provide any suggestions or comments on the mini-lectures. Only the more pertinent ones will be discussed in this section. The complete list of suggestions and comments can be found in Appendix 3.

One student suggested that good speakers in the group be ensured and another suggested that the tutors reinforce the concepts after the mini-lectures. This again stems from the student's fear that he or she may not gain a clear understanding of the topic. Having tutors reinforce the concepts can be seen as a solution to this concern.

There was also a suggestion for tutors not to give impromptu comments after presentations as it made the presenters feel uncomfortable. It is important for tutors to provide a nurturing and non-threatening environment so getting other tutorial mates to provide feedback instead of the tutors might alleviate any discomfort or fear. This is in fact currently practised, to encourage even more active student participation. It has been observed that students are more than capable of offering pithy comments on their peers' presentations, highlighting areas of strength as well as those needing improvement, and the comments are valued by the peer teachers.

Some other suggestions noteworthy of comment have to do with students wanting to take on more responsibility while others want to take on less. Three students would prefer that PPT slides were not provided but one student wanted the PPT slides to be given in printed form. Another wanted to have more autonomy in choosing materials yet another wanted to be given a more in-depth briefing on the topics by the tutor. Clearly, some students appreciate the learning that takes place when more independence is given while some others want to be spoonfed.

One other student also suggested that there should be a question and answer session included after the presentation of the mini-lectures. This is also already in place now.

As for the comments on the mini-lectures, all are positive except for one student who indicated that it is nerve-wracking but who went on to say that the experience was enjoyable nonetheless. The other positive comments serve to reaffirm the benefits earlier acknowledged by students.

■ Results from tutors' survey

As for the results from the tutors' survey, the study seeks to solicit the tutors' views on the capabilities of students to deliver effective lectures, important considerations in implementing mini-lectures, pros and cons of mini-lectures, achievement of objectives of mini-lectures, and their comments and/or suggestions for improvement. The following subsections will deal with each of these in turn.

Capabilities of students to deliver mini-lectures
Four out of the five tutors surveyed thought students are capable of delivering mini-lectures while one noted that the students who prepare the lecture tend to benefit more than the 'passive' listeners as presenters are forced to study the topic in more depth. It is true that students stand to benefit a lot from delivering the mini-lectures. However, students appreciated the variety of different presentations and enjoyed learning from their tutorial mates. In addition, the choice of the mini-lecture topics ensured students' greater motivation to learn them well. Currently, as listeners to the mini-lectures, students are also being asked to critique their peers' presentations and encouraged to ask questions. As such, they are actively engaged in the learning process.

Important considerations in implementing mini-lectures
As the methodology is relatively new, it is useful to find out what tutors think are the important considerations in implementing mini-lectures. Most tutors thought the following considerations were important when getting students to give mini-lectures: allocating the time for the mini-lectures, defining the scope of the topic, providing sufficient guidance and materials, and making the task manageable. These have all been considered in the implementation of the mini-lectures on which the present study is based.

Advantages of mini-lectures
Most tutors thought that the mini-lectures provided a good platform for students to hone their oral presentation skills as "delivering a lecture is not something they are comfortable with, but a skill that will eventually prove to be valuable". One tutor pointed out that giving mini-lectures helped students to "internalise the material presented". Two tutors felt that mini-lectures encouraged students to be "responsible for their own learning as they tend to be more actively involved in the learning process than if the lecture was totally given by the tutor". It is worth noting

that the main advantages noted by the tutors correspond with what students also see as benefits of the mini-lectures.

Disadvantages of mini-lectures
Some students placed in a weak group felt that they were disadvantaged and they thought that a tutor would do a better job. This, according to a tutor, was due to "the feeling of insecurity". One tutor felt that students might not have the "perspective/background on the topic that the lecturers have." Another tutor noted that, "in situations where groups presenting did not do a good job at explaining the topic, other students in the class might not benefit as much". It was also felt that some weaker students might "seemingly affect the class learning negatively" and this might then slow down the pace of learning. However, while it was acknowledged that some groups tended to be better than others, "the tutor will always be "there to clarify unclear points".

Achievement of objectives
Tutors were also asked to what extent they agreed the objectives of the mini-lectures have been achieved. All tutors agreed that the following two objectives have been achieved: (1) students have more exposure to formal oral presentations; and (2) students take ownership of their own learning. Four tutors agreed that students learn more through the mini-lectures than through the tutor-centred lectures, while one chose to remain neutral.

Comments/suggestions for improvement
A few comments and suggestions were received on how the mini-lectures could be further improved in their future implementation. One suggestion is that students should be given only the notes but should prepare their own PPT slides in order for the main ideas to be better reinforced. The tutor, however, acknowledged that it is understandable that with the time constraint, it would only add to the students' workload. In any case, students' initiative and effort to customize the lectures should not be overlooked. Another tutor noted that the effectiveness of the mini-lectures was improved with students being given a lecture and notes on oral presentations before being asked to deliver the mini-lectures. (This was not done in the previous semester.) One other useful suggestion was that students' feedback should be monitored and that suggestions that are pertinent to improving mini-lectures should be followed up.

Implications
This research on mini-lectures has been instrumental in assessing its effectiveness as a teaching-learning pedagogic tool in the Business Writing module. The implications drawn from the findings are pertinent to the successful continuation of the class activity.

◼ **Effectiveness of mini-lectures**
  Using mini-lectures as a class activity is an effective way of getting students to

work with others as well as to take on responsibility for their own learning. The advantages outweigh the disadvantages. The way teams are able to bond, the collaborative learning that takes place, the innovativeness of the way the lecture is prepared, organized and presented, and the higher level of satisfaction and performance through cooperation are distinct markers of successful learning. Such outcomes are difficult to achieve through presentations by individual students or the traditional teacher-centred mass lecture.

■ **Creation of a nurturing environment**

While we recognise the benefits of the mini-lectures, we cannot ignore the importance of a positive environment where group discussions thrive and opinions are valued. Before the implementation of the mini-lecture series, a clear briefing on the purposes and goals of the mini-lectures should be conducted to highlight the value of the class activity to students. This can help reduce the resentment that some students may feel about the activity or alleviate the insecure feelings a few may have regarding this student-centred pedagogic tool.

On the part of the teacher, he/she has taken on a significantly important role as a facilitator instead of a mere instructor. The task of the facilitator is more challenging than that of an instructor as it entails alertness to the group dynamics and intellectual discussions. In addition, it is vital for the teacher to create a positive and nurturing environment for discussion and objective feedback to thrive. Both the students and tutors in this research recognise the importance of evaluation during the mini-lectures and hence the tone of the class has to be set correctly at the start. Feedback can be done by students themselves, their peers and the tutor. This way, comments will likely be better received and it also paves the way for independent reflective learning as students self-critique their presentations. The evaluation by peers is to provide perspectives by external parties while the final comments given by the tutor help to reinforce the positive and/or minimize the impact of negative feedback. At present, the evaluation is done by students' peers and the tutor. Self-evaluation could be implemented, if time permits.

■ **Criteria setting for mini-lectures**

As students are generally concerned about their performance and grades at the University, it is professionally appropriate to provide the criteria for assessment of the mini-lectures at the start of the activity. This gives students a clear idea of the expectations and the standards required. This also aids the evaluation provided by peers and the teacher. The criteria provide a base upon which feedback can be given. It thus makes evaluation more objective. Instead of subjective comments, feedback can then be grounded in a set of well-defined criteria.

Currently, students are given the criteria for assessing their peers on their presentation skills and are informed of the percentage allotted to the mini-lecture component of their class participation marks. In preparing for the mini-lecture presentations, students therefore know what to pay attention to and in critiquing their peers' presentations, students know what specifically to watch out for.

■ **Organisational aspects of implementing mini-lectures**

One consideration in the organization of the mini-lectures concerns the formation of groups, as groups of mixed abilities are likely to succeed more than those that are predominantly weak. It would therefore be effective if the tutor can be alert to the varying oral abilities in the class and deliberately form groups where a mixture of talents can be found. However, this may not be easily achieved when groups are formed early in the course.

In addition, timing of the mini-lectures is also important. It is useful to give students sufficient time to prepare for their lectures. This will help students research sufficiently and prepare themselves well for their presentations.

■ **Use of given resources**

As most students appreciate the provision of notes and PPT slides for their lectures, this feature should be retained but students should be encouraged to explore beyond the given. They should be encouraged to be enterprising in their research and preparation so that the presentations can be very effective. The "freeplay" element can bring creative and successful teams a greater sense of satisfaction and achievement.

Currently, a hard copy of the notes is no longer provided to the students. Instead, the notes together with the PowerPoint slides are all made available on the course website. Links to other relevant websites are also given. As students are already in an internet environment when they access the materials, they are more likely to explore those websites to gather additional information on the topic. It has been noted that some students have even gone beyond the websites recommended in search of relevant additional materials. Efforts made by students in taking the initiative to go beyond the materials provided are given due recognition to serve as further encouragement of this positive development. A page devoted to 'Students' Contributions' has been created on the course website to display some of the students' best efforts.

Conclusion

The benefits that can result from the implementation of the 'mini-lectures' methodology are many, providing a more enriching and interesting learning experience for the students than large-group lectures, as evidenced by the findings of this study. Students are actively engaged in the learning process, made to take greater responsibility for their own learning, presented with the opportunity to exercise their creativity, engage in collaborative learning and harness their team working as well as oral presentation skills. It is for these reasons that the 'mini-lectures' methodology is now being continued in the new Business Communication module (which replaced Business Writing from the academic year 2003-4). Given the effectiveness of this pedagogic tool, it could be considered for implementation in other communication skills modules.

The role of the tutor as a facilitator is crucial to the success of any class activity. In the implementation of the mini-lectures, the tutor is instrumental in setting the

standards: ensuring that the task is manageable yet challenging for the students, managing group dynamics, creating a positive and nurturing environment for learning and evaluation, and helping students realize their individual as well as team potential. An effective facilitator who knows what is required of him/her and the students can help make all learning rewarding.

Mini-lectures are a platform for collaborative learning, team teaching and project management which is reflective of work situations in real life. Mini-lectures thus equip students with the requisite skills to operate effectively in teams for their future professions.

The bonding of teams is a natural outcome for most groups where common objectives are set. The failure of a few groups in delivering the lectures effectively does not negate the benefits mini-lectures bring to the class. There is evidence of growth in the students as individuals and team members. Together as a group, the students engage in active learning and the sum total is far greater than that of individual contributions. This is a salient feature in group activities such as mini-lectures.

Learning has moved onto the "learner-centred" paradigm. Where students (especially those at the tertiary level) are capable of researching and presenting their own views on selected topics, such independence and inquiring spirit must be encouraged. The "weak" and "shy" need a catalyst to improve their oral communication skills and the mini-lectures, being delivered as a team, provide one such platform where they can be "strengthened" or "emboldened" by their peers.

In conclusion, 'mini-lectures' are a pedagogic tool that helps students realize their potential and gives teachers a greater sense of fulfillment as facilitators. The learner becomes active and self-motivated while the teacher functions as an effective resource manager of talents.

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APPENDIX 1: Student Questionnaire

Questionnaire Survey on Mini-lectures for ES2002 (For Students)   *We
are conducting a survey to assess the effectiveness of the mini-lectures in the Business Writing course.
Your honest feedback is sincerely appreciated.*
Group: _____
Topic presented by your group : _____

According to the specified roles below, please give your views.

As a presenter:

1. What are your views about delivering mini-lectures? Please rate.

	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
a. They take a lot of time to prepare.					
b. They are nerve-wracking.					
c. They are a good learning experience.					
d. They are useful for team-building.					
e. They give me a chance to practise my oral presentation skills.					
f. They force me to read up more to understand the given topic so as to talk about it more confidently.					
g. They help us appreciate the task of teaching better.					

   h. Others (please specify): _____
   _____

2. How useful are the following in the preparation of the mini-lectures? Please tick the appropriate answer.

   a. Notes   Very useful _____   Useful _____   Not Useful _____

   b. PPT slides   Very useful _____   Useful _____   Not Useful _____

   c. Lecture on OP given by tutor
      prior to mini-lecture series   Very useful _____   Useful _____   Not Useful _____

3. Did you enjoy preparing the mini-lecture? _____
   Why? _____
   _____

4. Do you think mini-lectures should be continued? _____
   Why? _____
   _____

As a listener:

5. What do you think of mini-lectures? (you may tick more than one answer)

   a. They are a waste of time.   _____

   b. It is primarily a tutor's job.   _____

   c. They are not beneficial as some students are ineffective speakers.   _____

   d. It is interesting to learn from our tutorial mates.   _____

   e. They add variety as we get to listen to different people besides the tutor.   _____

6. Do you have any suggestions/comments on the mini-lectures?

   _____

   _____

   _____

Questionnaire Survey on Mini-lectures for ES2002 (For Tutors)

1. Do you think students are capable of delivering effective lectures?
   Please circle.   Yes   No   Not sure

2. What are the main considerations when getting students to give mini-lectures?
   Please tick the box(es).
   a) allocation of time
   b) defining the scope of the topic
   c) being alert to the group dynamics
   d) providing sufficient guidance and notes
   e) making the task manageable
   f) others (please specify) _____

3. What are your views on students giving mini-lectures?
   Advantages
   _____
   _____
   _____
   _____

   Disadvantages
   _____
   _____
   _____
   _____

4. Do you think the following objectives have been achieved through the mini-lectures?
   Please rate.)

	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
a. Students have more exposure to formal OP					
b. Students take ownership for their own learning					
c. Students learn more this way than through the tutor-centred lectures					

5. Comments/Suggestions for improvements:
   _____
   _____
   _____

APPENDIX 3: Suggestions and comments by students

Category A: Suggestions for improvements on logistics, organization and implementation

Try to delay mini-lecture by a week
Focus on contents to test understanding of topic
Ensure good speakers in the group
Tutor can reinforce the concepts after lecture
Give feedback to students so that they can improve
Should not get impromptu comments – makes one feel uneasy presenting
Provide more visual aids
Provide presentation slides in printed form
Encourage students to add/alter contents
Have individual assignment instead, it's faster
Do not provide PPT slides so that:
— students will have more challenge doing them
— students can do more research
Let students have more autonomy in choosing materials and style
Should have Q & A, go beyond OP
Lecture on more topics
Increase the time for OP (x3)
Vary duration of lectures
Give more time to prepare
More mini-lectures (x2)
Select more lively and interactive topics for students to present
Tutors should give students in-depth briefing on topic rather than have students rely on notes
Have more readings

Category B: Comments on the mini-lectures

Nerve-wracking but utterly enjoyable
A good learning experience
Good introduction to the course
Useful, increases confidence
Interesting method to get students to participate
Learning from one another
Realise the possibility of speaking well
Feedback after mini-lectures are useful for improving OP
More opportunity to practice OP and reinforce learning
Good exposure for less effective speakers
Gives tutors better idea about outstanding students
Should remain to promote interaction
Should be continued (x5)
Interesting way to learn
Adds spice and different from tutors giving lectures
Tutor join students in preparation
Better to have tutors present mini-lectures (x2)

8 Scaffolding in Designing Self-access Programs

Accommodating learner's readiness

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Hong Kong students are often described as "dependent, reticent and passive" (Pierson 1996 as cited in Chan 2001, p.286), which is not favorable for independent learning. This project focused on two self-access programs, one being compulsory and the other voluntary, with different forms and levels of scaffolding offered to first year students in two semesters at a university in Hong Kong. The aim was to examine the role of 'learner's readiness' in the effectiveness of self-access programs.

In Stage One, a questionnaire survey was conducted before the first program started to find out how ready the students were in autonomous learning by analyzing their (1) perceptions of self-access language learning and (2) autonomy-related characteristics. Another questionnaire was administered at the end of the program to gauge how the readiness affected students' receptiveness to the program and how the experience in the first program prepared students for the second one.

In Stage Two, two groups of students, one who completed the second program and the other who did not, were interviewed to investigate what factors were facilitating or hindering development of learner autonomy throughout the year.

Findings from this project would provide insights for language teachers on how to progressively prepare students for autonomous learning by accommodating their readiness in designing self-access programs.

Background of the Project

As language teachers at tertiary level, we have been involved in designing and running self-access language learning programmes for students for a number of years. On the one hand, we see the need to train students to become effective independent language learners; on the other hand, students do not appear to be ready for it. Hong Kong students have always been described as 'dependent', 'reticent' and 'passive' (Pierson as cited in Chan, 2001, p.286)**.** Bankowski and Lam (1999) even pointed out that Hong Kong first year university students have difficulties in handling tasks that require them to exercise learner autonomy. Such dispositions do not favor the promotion of self-access language learning.

Literature has emphasized the importance of the 'needs' and 'interest' of individual learners in effective self-access programs (Kenny, 1993; McCombs & Whisler, 1989; Tumposky, 1982). However, it is not possible for us to tailor make self-access programs for individual students in view of the severe funding cut from the government. In coping with the situation, we have offered a 'One for All' self-access language learning program since 2002 attempting to accommodate learners' readiness and gradually prepare students to become effective in autonomous language learning.

This paper aims to share this attempt of ours and it is hoped that our experience would give colleagues involved in promoting self-access language learning an alternative to consider.

■ The self-access programs

The self-access component was an integral part of the two English for Communication courses that first year students in the University were required to do.

In the first semester, the self-access program (Program One) was compulsory and it carried 20% of the course. Through a set of well-structured tasks, students were exposed to various skills to enhance their English language proficiency by setting learning objectives, becoming more aware of different language learning strategies and resources, knowing how to select suitable materials and learning strategies for effective self-access language learning, being able to work independently and manage their learning according to a schedule, establishing good learning attitudes and habits to assist future study, and being able to evaluate and reflect on the learning process and outcome. The program included 4 units: (a) Introduction to self-access language learning, (b) Speaking and Listening, (c) Grammar, (d) Reading and Vocabulary. Two hours were spent on each unit over 4 different weeks. The first unit was an orientation to library resources, and in the subsequent units, different materials and strategies for improving the language skill of the unit were introduced. In-class practice on the materials and strategies was given to students. In order to give opportunities for students to further explore and experience the various material types and strategies introduced, a set of tasks on each unit was designed for students to choose from. At the end of the program, students were required to submit a portfolio which contained all the tasks done and a reflection on the learning process and outcome.

In the second semester, the self-access program (Program Two) was voluntary and non-assessed. Unlike Program One which was more structured, students who chose to do Program Two had more freedom to make their own choice on what language area(s) to be focused on, what materials to use, how to use them, when to do the work and where to do it, etc. Since the training and experience from Program One should have laid the foundation necessary for further development of autonomous language learning irrespective of students' experience prior to entering the University, they were more ready to take a more active role in directing their studies in Program Two. As a support to students, teachers offered individual

consultations to give feedback and advice on their study plan, learning progress, and to help them to evaluate their learning outcome throughout the semester.

■ **The project**

After running the above programs for one year, it was felt by both teachers and students that learners' readiness was crucial in the effectiveness of independent language learning training. Therefore, with financial support from the Teaching and Learning Development Grant of the University, we carried out this project in the second year when the programs were run (i.e., 2003-2004) to examine the role of 'learners' readiness' in the effectiveness of self-access programs.

Objectives

The project aims to find out:

a. how ready first year undergraduate students are for autonomous language learning in terms of autonomy-related characteristics and perception of self-access language learning;

b. how students receive the two self-access programs;

c. what factors are facilitating or hindering development of autonomous language learning.

Methodology

The project involved two stages:

— In Stage One, two questionnaire surveys were conducted among 160 students before and after Program One. Questionnaire One aimed to find out how ready the students were in autonomous learning by analyzing their perceptions of self-access language learning and autonomy-related characteristics. Questionnaire Two was to gauge how the readiness affected students' receptiveness to Program One and to examine how the experience in the program prepared them for the second one.

— In Stage Two, face-to-face interviews were conducted at the end of Program Two to investigate the factors facilitating or hindering development of learner autonomy throughout the year. Twenty-five students were interviewed and among them, 10 completed Program Two, 10 did not do the program, and 5 gave up the work at an early stage. All interviews were tape-recorded and transcribed.

Students who took part in this project were first year undergraduate students doing the 2 semesters compulsory English for Communication courses. They were doing degree programs in Business, Social Sciences, Cultural Studies, Philosophy, and History departments at the University. Among them, 57% and 27% obtained grades D and E respectively in the English Language subject in the Hong Kong Certificate of Education Examination. Forty-six percent and 45% of them were awarded grades D and E respectively in Use of English in the Hong Kong Advanced Supplementary Level Examination or Advanced Level Examination. Thirty-two percent of them had self-access experience in secondary school.

Findings and Discussion

This section gives some findings on three areas relevant to the three research questions of the project. They are (1) students' readiness for autonomous language learning, (2) students' receptiveness to the two self-access language programs, (3) factors facilitating and hindering the development of autonomous language learning.

■ Students' readiness for autonomous language learning

Students' readiness for autonomous language learning was analyzed in terms of autonomy related characteristics and perception of autonomous language learning

Regarding students' autonomous dispositions (see Table 1), 84% of the students did not have the habit of setting a learning schedule and felt unable to follow it. Seventy-three percent thought they could not solve English-related problems without teacher's help. About half of the students thought they did not have the abilities to 'find ways to improve English', 'reflect on their own performance' and 'evaluate own English proficiency'. They also claimed that they were not aware of the 'learning objectives of language activities' and 'different learning strategies/resources for improving English'.

Despite the above characteristics which are not favorable for autonomous language learning, some findings are rather encouraging and positive. When asked to describe their qualities as English language learners, 63% of the students considered themselves as 'self-motivated' and 69% as 'willing to ask questions'. Seventy-one percent claimed that they were 'able to understand own areas of weaknesses in English' and 84% were 'willing to spend time and effort on learning English'.

Table 1 Autonomy-related characteristics

		No/Not sure
1.	Set and follow study schedule	84%
2.	Solve English related problems	73%
3.	Patient and persistent in study	50%
4.	Reflect on own performance	50%
5.	Aware of learning resources/strategies	50%
6.	Find ways to improve English	48%
7.	Evaluate own English proficiency	48%
8.	Aware of learning objectives	48%
9.	Self-motivated	37%
10.	Willing to ask questions	31%
11.	Understand own weaknesses in English	29%
12.	Willing to spend time + effort on English learning	16%

As for students' perception of self-access language learning, it was found before the start of Program One that students were quite positive towards self-access language learning. Table 2 shows that 92% of the students either strongly agreed or agreed that it 'should be promoted at the University', 62% thought it 'should be assessed' and 29% even thought that it 'should be compulsory'. The majority of the students (92%) perceived that 'student effort' was the 'main factor in successful self-access language learning'. Among the 32% of those students who had self-access language learning experience in secondary school, 80% of them thought that it helped improve their English.

Table 2	Perception of self-access language learning	
	before 1st program	after 1st program
1. should be promoted at LU	92%	87%
2. should be assessed	62%	69%
3. should be compulsory	29%	38%

When students were asked to rank the importance of different factors in effective self-access language learning, 41% chose 'training of learning skills/strategies' as the most important factor, 33% 'guidance and feedback from teachers', 15% 'availability of resources' and 11% 'support from peers' (see Table 3 below).

Table 3	Students' perception of the most important factor in effective self-access language learning
Training of Learning Skills/Strategies	41%
Guidance and Feedback from Teachers	33%
Availability of Resources	15%
Support from Peers	11%

From the above findings on students' readiness for autonomous language learning, it seems that students had a positive perception of self-access language learning but limited experience in it and lacked the skills and strategies. This can be attributed to the fact that the students generally had a low perception of their English proficiency because of their poor academic results in public examinations. They also realized the challenges ahead such as the Common English Proficiency Assessment that they had to take upon graduation and vocational needs in the future. Such a perception and realization was transformed into a strong desire to improve themselves and that was why so many students claimed that they were 'motivated' to learn and were 'willing to spend time and effort in English'. Unfortunately, throughout the education students received, they mostly followed teacher's instructions in doing assigned tasks. Their involvement in directing their studies was limited and, therefore, demonstrated limited autonomy-related

characteristics. Against this background of theirs, they believed that once equipped with the skills and strategies, they could and would engage in independent language learning effectively. Therefore, students were cognitively ready for self-access training.

■ **Students' receptiveness to the two self-access language programs**
The effectiveness of the two self-access language learning programs in accommodating our students' readiness can be revealed by their receptiveness to the programs.

Receptiveness to Program One
Results from Questionnaire II which was administered at the end of the first program show that students were receptive to the compulsory self-access program. As shown in Table 4, the majority of the students found the program useful regarding the strategies and resources introduced, in-class training, extended tasks, online components, and consultations with teacher. Furthermore, 82% of the students found the in class training 'interesting'. Fifty-seven percent of the students would like to have more online components in the program and 50% of them would like to have more consultations with the teacher. Such preferences may be due to the fact that learning English online was something quite new to them and they enjoyed the convenience and fun of the technology. Besides, since the majority of the students (68%) did not have experience in self-access language learning in secondary school, there was such a heavy demand on teacher consultations.

Table 4	Students' receptiveness to Program One		
	Useful	Adequate	Interesting
Strategies	82%	81%	—
Resources	73%	67%	—
In-class training	80%	70%	82%
Extended Tasks	71%	83%	28%
Online components	73%	57%	48%
Consultation with teacher	75%	50%	—

Regarding their perception of self-access language learning after completing Program One, 70% of the students thought that it was a 'necessary training for all first year students' and 64% thought that the program 'prepared students for independent language learning in the future'. Besides, students remained positive towards self-access language learning. As we can see from Table 2, there was still 87% of the students who thought that it should be 'promoted at the University'. There was even a 9% increase, from 29% to 38%, of students who said that self-access language learning 'should be compulsory' and an increase from 62% to 69% of students who said that it 'should be assessed'. The above changes indicate that students were aware that if the work was not compulsory, they simply would not

do it. They also realized that time and effort were needed for self-access language learning and they would like to have their effort recognized by giving them a mark. Therefore, they thought self-access work should be assessed.

However, students treated the tasks required by Program One as a piece of homework with a deadline. It can be seen from the way they completed the tasks. Sixty percent of the students did the tasks the week before the deadline and 30% completed the work two or three weeks before. Only 10% did the tasks throughout the semester as suggested. Also, only 28% of them enjoyed doing the extended tasks outside class. The positive perception of self-access language learning and the way they completed the tasks required by Program One shows a discrepancy between what students claimed and what they would actually do.

Receptiveness to Program Two
Fifteen students indicated an intention to do Program Two. This is not surprising because the program was voluntary and non-assessed. Besides, our students had a low perception of their own academic competence. Program Two which demanded more cognitive and metacognitive capabilities was too big a challenge to them. Previous research has shown that students are likely to resist self-directed learning as they often see it as 'more demanding of their time', 'doubt their ability to self-assess' and see 'grading as a staff responsibility' and 'feel frustrated and impotent with the lack of structure and direction' (Boud, 1995; Candy, 1987; McKay & Emmison, 1995; and Powell 1981b as cited in Clifford, 1999, p.123).

Among the 15 students, only 10 completed the work throughout the semester and the remaining 5 gave up soon after they submitted the study plan. Interviews with the 10 students indicate that they generally enjoyed the freedom in choosing the learning objectives, materials, strategies, etc., and saw improvement in English by doing Program Two. The following are some comments from students:

> "Because I do it on my own, not someone pushes me to do so. I think I get more than teachers push me. I have more freedom, I can choose what to learn, by what way and what time, all can be decided by myself."

> "I think the effectiveness is more obvious in Program Two because in the first program, it tells us the ways and then the second program we can use the ways."

> "In the past I was quite afraid of speaking English and my listening was not good, but after Program Two it seems much better."

However, a few still found it hard in setting and following a study schedule even after the training in Program One. As these two students reflected, "I could follow a study plan if someone forces me." "I only tried my best in the first week or first month, but after some time, no people to control me or guide me to do the work, so I just did less and less." Yet, some of them were able to modify their study plan in response to their own situation. For example, some replaced the learning materials which they found not useful or interesting.

Since students were still not experienced in self-access language learning, they asked for more consultations with the teacher. However, it is interesting to note that what they expected from the teacher was not simply feedback, advice and guidance but more importantly, someone to monitor their progress and to give them 'pressure' to complete the work. As this student said, "It [consultation with teacher] can help me to think more about my target in this subject, if there is no consultation, I may not think about that and I may not put so much effort in this subject, because in the consultation, the teacher will ask about my progress and I feel pressured to show her my work."

In spite of the difficulties the students had in the second program, the experience was quite positive and all the students claimed that they would continue doing self-access work in the coming two years. Even for those students who indicated no interest or gave up on the program claimed that they would engage in some kind of self-access language learning activities when they no longer have any compulsory English courses and have less involvement in extra curricular activities at the University. The main reason for their reluctance to commit themselves in Program Two was their priority given to other subjects and extra-curricular activities. Here are some remarks they made:

"I gave up because during the semester, I was very busy with other subjects."

"I think the sleeping hours keep on reducing, therefore I would choose to sleep or to rest but not for the optional work like Program Two."

"I didn't do Program Two because I needed to do many assignments in different subjects."

"I spent 50-70% of my time in hostel work. I think it's hard for me to actively do some self-access work. If I have time, I would do assignments and prepare for the exams."

■ Factors hindering and facilitating development of autonomous language learning

Review of literature shows that learner autonomy mainly relates to learners "taking greater control" and "making choices" in their learning (Holec, 1979 as cited in Kenny, 1993, p.221; Pierson, 1996). Results from our questionnaire surveys indicate that our students had difficulties in assuming greater control and making choices in their own language learning, thus were not ready for autonomous language learning. The interviews with students aimed to investigate how students' readiness in terms of (a) self-access training and experience, (b) experience in self-access language learning, (c) perception of self-access language learning, and (d) autonomy-related characteristics that affected their autonomous language learning.

With adequate training of independent language learning strategies, students would be equipped with the necessary skills such as setting learning objectives, choosing materials, strategies, evaluating and reflecting learning progress and

outcome. Since our students either had no training or only limited experience in self-access language learning before entering the University, the compulsory training was regarded as important by both students and teachers. The importance of Program One in preparing them for autonomous language learning can be seen from the following student comments:

> "Program One introduces many ways to improve my English, but not just reading our grammar books."

> "I think it Program One is beneficial. It introduced the ways which we can improve our English in different ways. For example, if we want to improve our oral English, we can join the Discussion Group."

> "I think after Program One, some students can develop the habit of assessing their work or doing the work periodically."

> "Through Program One, I learnt how to access to the school's resources about learning English."

> "Program One tells us the ways to learn and then in Program Two we can use the ways according to my needs."

The training from Program One gradually prepared students for Program Two which required them to play a more active role in self-access language learning. It provided them with the learning strategies and resources available and a better idea on the responsibilities they assume in a self-access learning mode.

In addition to formal training, having a positive experience in doing self-access work is equally important in encouraging the continuous development of autonomous language learning. If students enjoy the process of independent language learning or see its value, it is more likely that they would be motivated to continue the process voluntarily. Here are some quotes from students who did Program Two:

> "I think some of them [tasks of Program One] are useful. For example, when I had to fulfill the task to talk with foreigners, I quite enjoyed that moment to speak in that task."

> "I think all of them [tasks of Program One] are happy experience, especially we had discussion task in the library with a visiting tutor. I think it was very happy, it made me make some friends."

> "Program One can help me know what is self-learning. If no Program One, I may not know the advantages of self-learning and I will not learn by myself when I leave school."

> "I found Program One really helped to improve my English on my own, so I will do [did] Program Two in the [this] semester."

On the other hand, if students do not enjoy the process or do not see the value of the work, they will not be motivated to spend time and make an effort in self-

access work. What's more, if students have negative evaluations of a task, a 'negative affect' will result and the basic motivation will be "to avoid the learning task and the expenditure of any effort or persistence" (McCombs & Whisler, 1989, p.282), and students with "low self-perceived competence often resulting in task avoidance" (White, 1959; Harter, 1978; Bandura, 1989; and Zimmerman, 1989 as cited in Fazey & Fazey, 2001, p.347). Students who had negative experience of Program One naturally would not choose to do Program Two. The following are their reflections on the experience:

> "I think the grammar exercises [are] boring, ...time consuming to search [for] materials."

> "The tasks are too easy, too simple, too few tasks. I can't improve my English by doing the tasks."

> "learned something but not practical enough e.g. grammar task. The result is not obvious."

> "I think that it is not useful for me to do the Program One because it is compulsory to do it. I just wanted to fulfill the requirements. I cannot improve myself for this task."

> "It is too easy because in each aspect just do one or two tasks, may be too few tasks and it is too easy. I did it the night before or the week before [the deadline]."

> "They [students who did not do Program Two] think some of the Program One tasks are boring, most of my friends did the tasks at the end of the semester. They felt that it was not interesting and gave them heavy workload."

Besides training and experience, students' perception of self-access language learning is also crucial for developing autonomous language learning. There is a relationship between the beliefs students hold and the study approaches and strategies they use (Chan, 2003). Since students generally believed that exposure to English equaled self-access language learning, learning objectives and reflection were often neglected in the language activities they took in Program Two. Besides, since secondary school, they have believed that self-access language learning activities such as reading English newspapers, watching English programs, and reading English books could be done without planning. This perception is evident in the following student comments:

> "Most students have knowledge on improving English on their own e.g. watching TV."

> "For self-access work in the future, I will read some English books to 'keep in touch' with English"

> "I could watch English programs without specific learning objectives."

> "To continue my self-access learning in the coming two years, "I will try to read some articles on China Daily everyday."

Another factor which plays an important role in promoting autonomous learning is learner's autonomy-related characteristics. Among all the autonomous dispositions investigated in this project, self-discipline and self-confidence seemed to be the two most prominent obstacles for our students.

Since students were not used to directing their own studies, they lacked self-discipline and they tended to give up easily when facing difficulties or boredom. Apparently, following a study schedule was a challenge to them and even the students themselves were very aware of that:

"I always change study plan, so it seems nothing has been achieved."

"In the coming years, I prefer an elective course to self-access work because I don't have self-discipline."

"I will follow the schedule just for a short time."

"I don't usually follow a study plan. If I want to do the work, I will do it."

"If I just do it on my own, I may not be interested and I will give up."
"No, I can't plan things. I can set up a plan but I can only achieve 50% and I will extend my schedule. I haven't got time to manage it."

"Actually, I haven't followed the plan. But when I have time, I will do it. Maybe it's near the exam. I skip it sometimes."

Even for students who had self-discipline, they did not have confidence in directing their own studies. For example, one student who did Program Two demonstrated self-discipline in her studies and she emphasized that she would not "put the tasks altogether at the end of the semester." However, she still showed heavy reliance on the teacher to 'guide' her in her self-access work. She even admitted that if she did it on her own, she would not have "motivation or interest or effort to continue at [till] the end."

Our students generally showed a lack of confidence in making decisions in learning English and applying the skills for independent language learning such as setting learning objectives, evaluating learning progress and outcome, etc. Also, they did not feel comfortable in solving English-related problems themselves. The following are some feedback from students:

"[confidence]… not too much…have some confidence in choosing materials."

"[doing self-access work] I'm not as confident as taking a course."

"Maybe I can improve oral skills, listening skills if I do it regularly. But for writing, it's quite difficult."

"I am less confident in it [setting learning objectives]."

"not good at doing these [self-access work]. [If I do self-access work in future], I might follow Program One ideas strictly, I don't have my own ideas."

Because of the confidence issue, students felt insecure without a structure to follow and incapable of taking control of their learning and of accomplishing the

learning goals. They did not believe that they would succeed in improving English by self-access language learning. They still perceived the teacher as an authority figure to oversee their learning process. In fact, Hong Kong students are used to 'the tradition of teacher-centered, didactic learning modes in which they see knowledge as something to be transmitted by the teacher rather than discovered for themselves' (Chan, 2001, p.286). Therefore, when doing Program Two, they demonstrated a strong desire to have their work "checked" by the teacher.

"I am not clear about how to do self-access work. I would seek help from instructor.

"well...regarding setting learning objectives, materials to be used, I would still like to seek help from previous teachers."

"I think if there are more teacher consultations, it will be better, because it can check up how much work I have done."

"In Hong Kong since kindergarten we learn so passively, students always learn because of teachers and assignments but not they want to learn. So they are not active in learning."

"I think teachers can check them [the self-access work] regularly, then it can help them [students] to manage the time better."

In short, interviews with our students show that training, experience, perceptions, autonomy-related characteristics are the factors which contribute to students' difficulty in assuming greater control and making choices in their own language learning, thus hindering the development of autonomous language learning.

Conclusion

Our experience in running the two self-access programs has enabled us to understand better the complexities of learners' readiness in autonomous language learning. Such an understanding has helped us to identify issues that should be addressed and catered for in designing self-access programs.

The issues that should be addressed in designing a self-access program for learners who have limited or lack experience in self-access language learning are skills and strategies training, proper perceptions of self-access language learning, autonomy-related characteristics and positive learning experience. In order to provide a platform on which the above issues can be addressed, the following can be considered:

a. identify students' common language needs and weaknesses in English
b. make clear the idea/concept of self-access language learning
c. identify domains where skills are required (e.g. learning objectives, materials, strategies, reflection)
d. train students with the skills and strategies (e.g. diagnosing learning needs, identifying resources for learning, choosing and implementing appropriate learning strategies and reflecting and evaluating learning progress and outcome)

e.   introduce resources available
f.   design interesting tasks where students can apply the skills/strategies and become familiar with resources
g.   give students a pool of tasks to choose from to suit their different interests and preferences
h.   allow flexibilities in task requirements
i.   provide feedback and guidance through individual consultations

The above can be regarded as scaffolding providing students with sufficient support with which they can:

a.   become aware of how to learn methodically
b.   understand their own learning preferences and abilities
c.   assume responsibilities in autonomous learning
d.   exercise control in domains they are capable of
e.   develop confidence and establish good learning habits
f.   enjoy the process and see the value of self-access language learning

As we see it, the platform is critical before students can take a more active role in directing their studies and that is why we think the training should be made compulsory. Although making the program "compulsory" is against the principle of learner autonomy, it is an alternative to consider when learners are seen as not ready to exercise the autonomy in learning. Also, even though students may not have the motivation to engage in autonomous language learning right after the training, they already moved a step forward along the continuum from learner dependence to independence.

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9 Re-examining the Criteria for Diagnosing Undergraduate's English Skills

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One of the challenges, among others, in the design of the placement test is considerations involving discipline-specific practices and general academic writing skills (Johns, 1997; Belcher & Braine, 1995). More specifically, the question paper needs to be universal and bias free without favouring any particular academic style usually associated with a particular discipline. Though literature debates on the variability of the nature of academic writing and the lack of uniformity in expectations by disciplinary experts (Lea & Street, 2000; Allison & Wu, 2002), as practitioners we need to design an effective tool that diagnoses writing abilities in academic English. The question we posed to ourselves, and thereafter to our colleagues in a department-wide survey is this: What are the features of academic English that we are commonly agreed upon that we can build into a taxonomy for marking? Why a taxonomy and not descriptors for marking? We find that descriptors are too general and they are variously interpreted. For example, a descriptor such as an 'A' grade might read: 'Student has argued strongly in favour of topic.' However, there is no specific advice on what makes a strong argument. Where does a strong argument become an opinionated one?

Introduction

This study investigates the extent to which language teachers are able to agree on a list of items in a taxonomy used for the marking of a diagnostic English test. The diagnostic English test is an important instrument used to ascertain the English language needs among first year undergraduates at the National University of Singapore. Undergraduates who have obtained a grade of B4 and below at the GCE 'A' level examination[1] need to take the test. Their test scores will determine whether they need remedial help in English to help prepare them to meet the language requirements needed to cope with the demands of the academic curriculum at the university.

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[1] A grade of B4 means that the candidate is proficient in English but lacks ideas and or organization in his writing. The grades below this are C5 and C6 which are passes showing weak language skills; D7, E8 and F9 which show very weak language skills .

The language needs of undergraduates are identified wholly through the administration of the diagnostic test. As such, it is crucial that the criteria used to aid analysis be thoroughly examined and systematically developed periodically. Ultimately, Ackerman (1993) notes that "[the] undergraduate degree ... is part of a social conversion, an immense social experiment whereby students learn by 'approximations' of the languages of institutional power" (pp. 342-343). As such, the accurate identification of language needs extends to issues of the empowerment of students to function as effective members of the institutions and the eventual attainment of their educational goals.

It is not uncommon for diagnostic test markers to experience difficulty in deciding whether particular scripts indicate the need for language support despite the use of a set of criteria as a guide for marking these scripts. However, if such difficulties are not resolved with the benefit of a moderators' meeting, then a student could be deprived of an English course that he or she would need or else be saddled with an English course he or she could do without.

On the other hand, if a group of markers were already following a set of descriptors, then how come inter-rater variations could still occur? The question for us was: How could we be more sensitive and more accurate about deciding what sort of writing would qualify as being academically promising and what sort of writing could be said to need further help? In short, the purpose to this paper is to find out how we can be more agreed.

One of the main issues in the identification of the taxonomy is the need to arrive at a consistent list of criteria of the features of academic English in the midst of loud dissenting voices on what academic English really is (e.g. Elbow, 1991; Hoey, 2001). This difficulty is no doubt complicated by the knowledge that there is little expression and even less consistency in the explicit statement of the kinds of English language skills that are required of undergraduates by different disciplines and by different lecturers within each discipline. This is clearly discussed by Horowitz (1986) in his seminal paper aptly entitled "What do professors really require?" More recent ethnological studies by Lea and Street (1999) and Candlin and Plum (1999) into the issue of the variability of English language requirements in different disciplines at tertiary levels also point in the same direction—that the picture of a homogenous set of writing skills that will equip students for their undergraduate stint is all but pure fiction.

The Study

We formulated a simple questionnaire (Appendix A). It consists of only three questions so as to be simple and unimposing on our respondents. Two questions were close-ended. The respondents were required to evaluate or give a rank to a set of descriptors. The third question was open-ended and the respondents had to describe what they thought made up academic tone and style.

Items in the questions were repeated to see if there was consistency of responses. Unfortunately, here we have to admit to a design flaw. There were a couple of items that we omitted to repeat which turned out to be quite important

such as "objectivity" and "grammatical accuracy", both of which were mentioned extensively in responses to Question 3 but which we either only put in once (objective tone in Question 2) or disregarded completely (grammaticality).

We sent out the questionnaire to 40 colleagues at CELC. We received 15 returns.

Results and Discussion

Table 1 presents the responses indicating the relative importance of 11 criteria that the researchers thought were most pertinent to academic essays.

Table 1 The importance of various criteria in evaluating academic essays in English					
Criterion	1 (Not at all important)	2	3	4	5 (very Important)
Use of secondary sources	1	2	4	3	5
Definitions of key terms		1	3	7	4
Delineations of arguments		1	1	2	11
Selection of persuasive points				3	12
Synthesis of opposing views			3	5	7
Originality of points			4	6	5
Consistency of stance (logic)				4	11
Appropriate starting anecdote	2	4	5	3	1
Appropriate rhetorical question		2	4	8	1
Inappropriate rhetorical question	4	4	3	2	2
Hedging words	1				14
No. of Generalizations Tolerated*	13	1			

*One respondent indicated 'zero tolerance' for generalizations.

With reference to Table 1 above, we found that our examiners are mostly agreed on what is important in evaluating a piece of writing. In some cases, there is almost complete and identical agreement; for instance, 14 out of 15 said that hedging words is very important, and 15 respondents said that the selection of material to make a persuasive argument is important or very important. Almost all respondents said they had a low tolerance of generalizations with one going so far as to say he/she had zero tolerance of generalizations. In addition, 11 out of 15 respondents said logical development of the essay was important, as was delineation of an argument.

Where examiners disagree seems to be in the degree of importance attached to each criterion and also in the relative order of importance in some criteria, such as the importance of appropriate rhetorical devices (anecdote and rhetorical question), as evidenced by the diversity of responses as to the importance of using appropriate rhetoric.

Table 2	Ranking of criteria							
Criterion	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
References			1	1		1	5	
Definition	1	1	1	1	2		2	1
Delineation	4	2		3	5			
Selection of persuasive points	2		2	3	2			
Synthesis	3	1	2	1		2		
Original thought	1	2	3		1	1		1
Consistent argument	2	4	3	2	1	1		1
Clear outline	5	3			3		1	
Objective tone			2	3		4	1	2
Formal vocabulary					1	1	2	1
Hedging			1	1		1	2	4
Absence of generalizations				1		1	1	3

1 = Most Important   8 = Least Important

With reference to Table 2, we found that there was a wide spread of how the respondents ranked the same set of criteria. There are some criteria which are more frequently ranked as being the most important such as delineation of argument and having a clear outline. This is contrasted with criteria which are ranked as least important in which the respondents seemed to show no strong agreement.

One surprising finding was that seven respondents ranked hedging as being least important among a set of 8 criteria whereas the same respondents had earlier in question 1, categorically responded that hedging is very important to assess if a piece of writing is academic in style. We decided to do a comparison of these seemingly inconsistent responses. This is taken up in the discussion of Tables 4 and 5.

With reference to Table 3.1, specifically we asked if our respondents thought that pre-university students could realistically be expected to know what academic style is. Two respondents thought we meant to ask if their expectations were realistic. Nevertheless, the majority of respondents seemed to think that a student could be expected to write a convincing, argumentative, factual and clear essay with grammatical accuracy on a stated stance to an essay prompt. There seemed to be no expectations of these pre-university students being able to give citations, have bibliographies or use hedging language, which is in contrast to the respondents' description of what makes for academic tone.

We found that the word "objective" was most frequently cited as being an important criterion of an academic tone. Academic tone was also characterized as having formal vocabulary, analytical, balanced and convincing among other

Table 3.1	Respondents' expectations of undergraduates' management of academic tone	
Adjective*		**Frequency**
Grammatical accuracy		5
Coherent/cohesive		5
Logical		4
Developing a stance		3
Clear		3
Own views/Original		3
Taking a stance		2
Accurate language		2
Meaningful content		2
Convincing		2
Organized content		1
Supported arguments		1
Concise		1
Argumentative		1
Substantial		1

* Including synonyms, e.g. consistency = logic, clear = clarity

descriptions. In addition, academic tone is also conveyed by the giving of citations, bibliographies and the use of hedging words. However, not many respondents actually wrote this down.

We thought we would look in more detail at the apparent inconsistency of responses. In Table 4, we listed the five criteria most often evaluated as being very important in Question 1 and compared these to how they were ranked in Question 2 and if they were voluntarily brought up again in Question 3.

The criterion of hedging, while ranked most frequently as being very important in Question 1, hardly ranked at all in Question 2 and only once in Question 3. Whereas selection of material was inconsistently consistent across all three questions, that is, it was always mentioned as important but not always ranked consistently in how important it was to the respondent. This is the same for how important the criterion of delineation of argument and consistency of argument are.

Table 5 shows how the three most frequently elicited descriptions of what makes academic tone: that is, writing which is "objective", "grammatically accurate" and "coherent" compares to the responses to the same or equivalent criteria in questions 1 and 2 where applicable. We see again this *inconsistent consistency*, that is, these criteria are important **but** are not always of the same importance. This all begs the

Table 3.2 Respondents' perception of what academic tone is

Description	Frequency
Objective/neutral/impersonal	10
Balanced	4
Formal	3
Clear thesis	2
Synthesis	2
Secondary sources/bibliography/citation/proof of evidence	2
Convincing	1
Hedging	1
No hedging	1
Analytical	1
Humble	1
Conciliatory	1
Appropriate to reader	1
Knowledgeable	1
Original	1
Highly evaluative	1
Crisp/concise	1

Table 4 Cross reference of top 5 criteria as ranked in Question 1 with corresponding Questions 2 and 3

Criterion	Q1	Q2	Q3
Hedging words are very important	14 x5	Highest ranked at 3rd position, 4 entries ranked at 8th position, 9 entries in all	Only one entry that said hedging was part of formal vocabulary expected in academic writing, one entry saying no hedging was expected at all.
Selection of persuasive points is very important	12 x5	2 ranked it at first position, lowest rank at 6th position, 9 entries in all	"Interesting content", "developing a stance", "clear thesis", "balanced", "convincing" and "knowledgeable"
Delineation of argument is very important	11x5	4 ranked at 1st position, lowest rank at 5th position, 14 entries	"organized", "clear", "outline", "specific"
Consistency of stance is very important	11x5	2 ranked at 1st position, lowest rank at 8th position, 14 entries	"coherent", "cohesive"
Synthesis is very important	7x5	3 ranked at 1st position, lowest rank at 8th position, 9 entries	"representation of different voices heard"

Table 5	Cross comparison of criteria by frequency of mention in Question 3 with ranked position in Questions 1 and 2			
Criterion	Q3	Q1		Q2
Objective*	11	12 entries; 2 at rank 3; 4 at rank 6; 2 at rank 8		N/A
Grammatically fluent/accurate	6	N/A		N/A
Coherent/cohesive/consistent	4	14 entries; 2 at rank 1; 4 at rank 6; 1 at rank 8		11x5

*Surprisingly no synonyms were used; respondents consistently used the term "objective".

question of what we can conclude given the responses of our respondents compared with those of other respondents in similar studies.

Discussion and Conclusion

The inconsistency in survey responses is not totally unexpected as there is a lack of clear consensus in the description of proficiency skills needed for academic writing too (see for example, Horowitz, 1986; Candlin & Plum, 1999. Formal English or academic writing is sometimes identified with scientific and technical writing (Shaw & Liu, 1998). Bhatia (2002) points out that the concept of academic English is fuzzy as it is used to cover "all areas of academic concern" including teaching, research, examination and even administration (p. 28).

The problem is complicated by the growing awareness that a general core of academic English skills is insufficient in meeting the specific needs of specific disciplines. The awareness of inter-disciplinary differences in academic writing has been well-portrayed in work done on professional academic writing (e.g. MacDonald, 1994), post-graduate writing (e.g. Bunton, 2002) and undergraduate writing (e.g. Lea & Street, 1999). In fact, investigations have illustrated the prevalence of variations in academic writing even within two related fields, such as Samraj's (2002) study of abstracts from Wildlife Behaviour and Conservation Biology texts. As such, to some extent, the lack of consistency in the survey response could be a reflection of the lack of clear consensus on what academic writing skills an undergraduate ought to possess in order to be able to cope effectively with the demands of tertiary education.

As language practitioners who design assessment criteria, the lack of consensus does not explain away the need to surface any areas of consistency in the characterization of academic English in the midst of overwhelming inconsistency. Despite the inconsistency in the responses gathered, there were some criteria that were consistently voted as essential features of academic English. For instance, the following features were agreed upon clearly being important for good academic writing by the respondents:

- Hedging strategies
- Selection of materials for a persuasive argument

- Consistency of stance
- Synthesis of opposing views
- Low tolerance for generalizations

As these are aspects of writing that are more consistently agreed upon as important for good academic writing, in the design of a taxonomy for diagnostic test, one needs to ensure that these characteristics feature in the award or penalty of marks in the assessment scheme.

Some of these descriptions need to be unpacked in that the consistency of stance, for instance, may be better described in more familiar terms such as 'the clear statement of thesis' and 'the maintenance of a position throughout the essay'. Similarly, 'synthesis of opposing views' may be more practically described as 'presence of counterarguments and rebuttals'.

It is also the case that taxonomies are categorized into bands to facilitate marking. These bands are differentiated from each other mostly by rather qualitative words. For instance, the difference between bands 2 and 1 in language skills could be described in terms of the use of 'more frequent' or 'less frequent' complex sentence structures. Such qualitative differentiation allows too much subjective interpretation. As far as possible, more concrete measures in the frequencies of desired language items should be provided.

Furthermore, since these are areas where there is a higher level of consensus, individual markers should then be ready to put aside other idiosyncratic preference for particular criteria which do not appear on the agreed list to maximise the level of consistency in the assessment process. Also, if the list of criteria is deliberated on and decided upon by the markers involved, there may also be a deeper sense of ownership and thus a higher level of motivation to make full use of them diligently. Thus, the importance of markers' meeting cannot be overemphasized.

Other important criteria for the diagnosis of academic writing needs can also be gleaned from a review of literature. Some sources of research work which address the characterization of the kind of English needed at the tertiary level include work done by Connor and Lauer (1985) and Elbow (1991). Elbow (1991) provides the following features that describe academic writing style that students can learn:

Formality	e.g. Mode of operation versus how they act
Impersonality	A complex and controversial issue, involving use of passive voice, elimination of the writer.
Explicitness	Use of detailed metadiscourse, e.g. I plan to explain
Hedging	A guarded stance
Complexity	Complex sentences and rich subordination—lexical density derived form reducing clauses to phrases and nominalisations

Perhaps, these are some aspects of academic language that the diagnostic test should focus on so that writers who already have a repertoire of these features will be identified apart from those who don't.

Connor and Lauer (1999) highlight the importance of teaching second language learners of English the effective use of sources as tertiary level writing will invariably involve the use of secondary sources. By extension, the use of sources could be one area that the diagnostic test could examine the students on. However, it is the more basic skills involved in source use that should be tested as this is an area that students have had very little experience with at the junior college level.

In short, those who design testing tools for evaluating the academic English proclivities of incoming undergraduates may do well to:

- Read the most up to date literature for a good overview of how language testing tools for academic English are evolving so as to keep abreast of the most accurate means of evaluation.

- Come together with faculty members from across campus to find out about the kinds of academic structures they expect in good student writing, e.g. presence or absence of hedging, in order to include descriptors that are relevant to evaluating the student's need for an academic English course.

- Come together with colleagues and co-markers from the language teaching unit which is charged with designing, developing and administering the entrance English test, in order to exchange professional views, to iron out differences and definitions in order to come to a better understanding of the method by which the test will be marked, and if not to have consensus, then at least to be on the same wave length with each other. And perhaps, although this is merely a hunch at present, to develop a sense of ownership for the testing tool and hence be more sympathetic in using it, and thus achieve greater inter-rater reliability.

We look forward to the opportunity to try out our ideas in a further study. However, for now, our conclusion is that faculty members must talk.

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Questionnaire: What Makes for Academic Writing?
We hope to ascertain what might make common descriptors for the evaluation of English in academic writing (or EAP). Our definition of academic writing is the style of writing that you would most likely find in an academic context for example, in an entrance exam in English. We appreciate your help in completing the questionnaire below.

CONTENT AND ORGANISATION
1. Please rank from 1-5, the importance you would attach to the following features of academic writing:
    a) The use of secondary sources
       (not at all important) 1   2   3   4   5 (very important)

    b) Providing definitions at the beginning of essays
       (not at all important) 1   2   3   4   5 (very important)

    c) Delineation of arguments so that the introduction states the scope of the writer's stand.
       (not at all important) 1   2   3   4   5 (very important)

    d) Selection of materials and points for a persuasive argument.
       (not at all important) 1   2   3   4   5 (very important)

    e) Synthesis of several opposing views (cohesion of ideas) that leads into the writer's own stand point.
       (not at all important) 1   2   3   4   5 (very important)

    f) Originality of points.
       (not at all important) 1   2   3   4   5 (very important)

    g) Consistency of stance (logic of development) throughout the text.
       (not at all important) 1   2   3   4   5 (very important)

STYLE
    j) Would it meet your requirements of academic style if the writer started with an appropriate anecdote as an introduction?
       (not at all happy) 1   2   3   4   5 (very happy)

    k) Would it meet your requirements of academic style if the writer started with an appropriate rhetorical question as an introduction?
       (not at all happy) 1   2   3   4   5 (very happy)

    l) Would it meet your requirements of academic style if the writer had reader-directed questions in the essay? E.g. "How would you like to be a victim of a bully?"
       (not at all happy) 1   2   3   4   5 (very happy)

    m) Would it meet your requirements of academic style if the writer used hedging —"would", "perhaps", "some might argue" etc, as an indication of a writer's effort at being objective? Yes/ No

    n) How many general statements such as "Everyone knows we have to economise in an economic downturn." Or "Nobody likes bullies," would you allow in a 500 word essay before you thought the writer was guilty of generalisations without supporting evidence?
       1-3   4-6   7-8   9-10   Over 10

2. Select and rank your 8 most important descriptors from the list below to evaluate content and organisation in academic writing, with most important being no. 1 and least important being no.8 on your list.
    (   )   References
    (   )   Definitions
    (   )   Delineation of arguments
    (   )   Ability to select apposite materials
    (   )   Synthesis of various ideas before presenting the writer's own views
    (   )   Original thought
    (   )   Consistent argument
    (   )   Clear outline
    (   )   Objective tone or register
    (   )   Formal vocabulary
    (   )   Hedging
    (   )   Absence of generalisations

LANGUAGE
3. a) What 3 adjectives or adjectival phrases would you use to describe your expectations of an entry level undergraduate's writing skills to be capable of so that he/she can write his/her term papers at university.

    _____
    _____
    _____

    b) Describe your perception of academic tone. Please list 3 points.

    _____
    _____
    _____

10 Integrating Critical and Creative Thinking and Enterprise into Technical Writing

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This paper focuses on the infusion of critical and creative thinking and enterprise into one of the writing modules offered to first year Singapore Polytechnic students. As innovation is the buzzword in Singapore's changing educational landscape, the teaching profession needs to stay relevant in this knowledge-based economy. The mission to nurture creativity and innovation amongst learners must therefore involve a change in the mindset of both educators and administrators. The paper will also seek to explore the seemingly unrelated relationship between the teaching of technical writing and the promotion of enterprise by showing how language and communication skills modules can complement the other specialized courses offered by the respective schools in the institution. The goal of teaching technical communication skills in the institution should not, then, be the improving of writing skills per se. *It should be to teach writing in contexts that promote enterprise and innovation, and hence a related goal should be to make the learner and educator aware of their roles in the arena of the new system.*

Introduction

The vision of creating "Thinking Schools, Learning Nation" (TSLN) is formed in the hope of building a workforce that will be able to cope with the changes of an evolving economy. The need to develop critical and creative thinking skills is deemed crucial for increasing Singapore's economic competitiveness especially in the knowledge-based economy. Singapore's Prime Minister, Mr. Goh Chok Tong, in his opening speech at the opening of the 7th International Conference on Thinking, reiterated that:

> The future wealth will depend on their capacity of learning.....their ability to seek out new technologies and ideas, and to apply them in everything they do will be the key source of economic growth (Cited in Chua & Leong, 1997).

Thus, the concept of TSLN introduced by the Ministry of Education (MOE) in 1997 is central to heeding the government's call to realize this national vision.

Educational institutions are entrusted with the responsibility to develop future generations of thinking and committed citizens, capable of making good decisions to keep Singapore vibrant and successful in future. Individual creativity, originality of thought and inventiveness are therefore deemed important to retain and increase Singapore's competitiveness as a knowledge-based society[1]. Since then, good progress has been made in infusing thinking skills into the school curriculum. A result of the TSLN is the concept of innovation and enterprise (I&E) which is one of the Desired Outcomes of Education stipulated by MOE. It states that students should be 'innovative—have the spirit of continual improvement, lifelong habit of learning, and an enterprising spirit in undertakings' (taken from http://www.moe.gov.sg/pld/ine/faq.htm). I&E is an important life-skill which will better prepare our young to stay relevant and thrive in a future of uncertainty and change.

The paper will firstly present a review of literature on the evaluation of creative and critical thinking skills. This section will look at Costa's (1997) ten indicators of intellectual growth in assessing thinking in students. Next, the paper will explain the integrated approach adopted by the writer to show how the aspects of creative, critical and enterprise skills can be infused into the teaching of technical writing. Following on, the paper will delve into using a three-pronged assessment to evaluate if learning outcomes are met.

Review of Literature: Evaluating Creative and Critical Thinking Skills
Assessing creative and critical thinking skills can be tricky as schools in Singapore have always used test scores to monitor if students have acquired set content and mastered specific skills. According to Sternburg & Spear-Swerling (1996), an overuse of test scores often results in the creative thinking of students being undervalued. It is thus inappropriate to measure critical and creative thinking, which is a process-oriented goal, with product-oriented assessment techniques, such as tests and examinations. Such standardized test scores can only give us a static number that reflects the achievement and performance of isolated skills at a particular moment in time.

Hence, experts like Sternberg & Spear-Swerling (1996), Perkins & Tishman (1995) and Costa (1985) have argued for a different kind of evaluation of thinking, moving away from the reductionist approach. Evaluation of thinking is much more than a way of monitoring and measuring quantitative results; it involves the qualitative assessing of learning attitudes and behaviours.

Thinking is dynamic; we learn from experience, react emotionally to situations, experience power in problem-solving and are energized by the act of discovery. Therefore, it is unsatisfactory to measure thinking through the amount of time spent on a task, minutes of instructional time, scores gained on achievement tests,

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[1] The knowledge society is a society where the ability to create, share and use knowledge is the key factor in the prosperity and well-being of its people. In this society, knowledge, as much as, if not more than, land, labour and capital, is the key to creating wealth and improving the quality of life. This contrasts to earlier societies such as agrarian society (when agriculture was the key to survival) and industrial society (when mass production of goods generated the most wealth).

IQ scores or percentage of objectives obtained. All these measures are irrelevant in collecting evidence of students' growth in thinking. It has been suggested by leading experts in thinking that good thinking can be identified through certain 'thinking dispositions' or 'intellectual characters'.

Costa (1997) has distilled the thinking dispositions and intellectual characteristics into ten indicators. He believed that a student's acquisition of these types of behaviour provides more usable information about growth in thinking. The first indicator is *perseverance*. Students very often give up easily when answers to problems are not evident. They are unable to analyze the causes or develop strategies to solve them. A thinking student will not give up but generate new strategies and methods to tackle the problems. If one strategy does not work, they are able to generate more back-up ideas and plans.

Decreased impulsivity is another observable behaviour that can be seen in a thinking student. Sometimes, students shout out their answers or start to work without fully understanding the directions and requirements. They are also quick to make judgements, jump to conclusions and are less patient to consider alternate viewpoints. Those who manage their impulsivity will take time to think, plan and consider different possibilities.

Another distinguishing characteristic of a thinking person, as proposed by Costa, is the ability to *pose questions and problems*. The types of questions he asks should progress to becoming more specific and profound in nature. His ability to recognize discrepancies, bias and other phenomena becomes better.

Flexibility or open-mindedness in thinking is another important element because some students have difficulty in considering alternative points of view or dealing with several sources of information simultaneously. According to Costa, some of them may still exist in Piaget's ego-centric stage. Their way to solve a problem seems to be the only way. They are more interested to know whether their answer is correct, rather than being challenged by the process of finding the answer. Some would feel insecure without a definitive 'right' or 'wrong' answer from the teacher and thus are reluctant to proceed without a definite solution offered to them. Costa felt that such inflexibility hampers the ability to generate more ideas.

Meta-cognition of the students should improve when they become more thoughtful. When they become more aware of their own thinking process, they are able to describe and explain their problem-solving skills or thinking strategies. This reflects what Costa (1985) earlier called intelligent thinking and behaviour. When they are presenting their ideas, students need to be conscious of their own thinking process and to be able to describe what goes on in their heads simultaneously.

To Costa, a thinking student is also one who can expand the number of *connections* between existing knowledge and new knowledge by extending, integrating, elaborating, analyzing and evaluating their ideas. They must be able to call on their store of knowledge and experiences as sources of data to support theories and meet new challenges.

The ultimate goal of teaching thinking skills is for students to *apply* them to

real-life situations. This means that the students must be able to use the skills effectively to generate creative ideas in different situations.

Enjoyment of problem solving is the most imperative indicator in assessing the growth in thinking. The thinking capacity of the students may not have changed if they still perceive thinking as difficult and avoid situations that they view as demanding. An indication of growing thinking ability is the change of attitude. The attitude should move from an "I can" to an "I enjoy" feeling.

Costa's 10 indicators of intellectual growth definitely do serve as a convenient competency checklist. But the development of thinking skills takes time. It is not a 'quick-fix' concept. It needs consistent and sustained instruction, carefully designed curriculum and well-trained teachers. The effectiveness of the teaching of thinking skills is demonstrated by sustained performance in a variety of situations that demand selective and spontaneous use of different problem-solving strategies rather than singular, isolated behaviour.

Therefore, in order to evaluate thinking effectively, teachers need to expand the range, variety, and multiplicity of assessment techniques, by moving away from norm-referenced, multiple-choice, standardized achievement tests. Costa believed that the emphasis is 'not on how many answers they know, but on how they behave when they don't know' (1985: 288).

Costa and Kallick (1992) suggested that to recognize students' growth in thinking, teachers can collect data through a repertoire of assessment techniques and systematize assessment procedures.

One of them is direct observation of students' performance in problem-solving situations. Teachers can describe students' progress: the lights that go on in students' eyes or the 'a-ha' of discovery in students' exuberance; the enthusiasm they display when engaged in a thinking activity; the sense of satisfaction and pride felt when they achieve the desired results. Such observation can be done by employing technology like videotaping students' interactions and expressions.

Collecting portfolios of selected students' work over time and inviting students to keep journals are ways to document students' growth. Thinking journals serve as a reflection log. By collecting and organizing samples of accomplishments, these portfolios offer rich resources for teacher evaluation and self-evaluation. Students could pen down their insights, draw an image, model or picture, or write down their inner feelings about the thinking lesson. They can also record critical incidents such as vignettes, sayings that indicate transfer, application, and internalization of concepts and strategies. Through metacognition, or thinking about one's own thinking, one can dramatically improve learning and significantly increase the levels of transfer of learning beyond the classroom situation into life (Lazear, 1991).

Interviewing students about their own self-concept and perceptions of themselves as learners is another way of evaluating thinking. Teachers could record students' feelings and learning experiences within the classroom. But most importantly, interviews can also help to capture students' personal insights and experiences outside the classroom that we cannot observe.

Assessing students' presentations, displays, exhibitions, and performances

according to a set criteria and to record indicators of dispositions and habits of mind exhibited during group projects and discussions are some methods of evaluating thinking.

Therefore, assessing thinking through the exclusive use of standardized, paper-pencil techniques is inadequate. To evaluate the effectiveness of the teaching of thinking, teachers must be able to observe and recognize thinking dispositions, behaviours and characteristics displayed by the students daily, and through a repertoire of evaluative methods.

The Integrated Approach

The approach taken in this paper is derived from over a few semesters of action research within the confines of the writer's technical writing lessons. When the writer first started teaching technical writing, she was constantly aware of the need to accomplish two goals: firstly, meeting the learning outcomes[2] of the module on technical writing, and secondly, attaining one of the desired outcomes of education in Singapore to groom students to be thinkers and life-long learners who are innovative and enterprising. The challenge was to bridge the two goals so that students could see the relevance of the skills taught in the module and how the skills acquired in the learning are applicable to their future endeavours. From the outset, it was easy incorporating creative thinking skills into the module as one of the inductive activities required the students to generate ideas through brainstorming techniques on a product they needed to improve on (see Appendix 1 for project specifications) before they embarked on their writing task. Blending the concepts of critical thinking and I&E into technical writing to make the learning as seamless as possible was more daunting. The challenge was not to create critical thinking and I&E-related lessons in isolation but to infuse these ideas into the curriculum, leveraging on modules that were taken by the students. Figure 1 shows the Integrated Approach in which the skills of creative and critical thinking and enterprise are incorporated into the teaching of technical writing.

With reference to Figure 1 (see next page), this section will explain the Integrated Approach used by the writer to teach technical writing. The approach comprises five stages: the Creative Thinking Stage, the Critical Thinking Stage, the Technical Writing Stage, the Presentation Stage and the Enterprise Stage. The Creative Thinking Stage was conducted at the beginning of the 8-week module on technical writing. Lasting for approximately 2 hours (equivalent to 1 lesson) , this stage allows the students to tap their creative juices to improve on the current baby jogger in the market so that it can better meet the needs of yuppies who give up exercising when a baby arrives (see Appendix 1 for project specifications). Drawing on the brainstorming technique, SCAMPER[3], students were guided by the SCAMPER acronym to ask questions (see Appendix 2 for a sample of questions

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[2] In brief, the learning outcomes are as follows: Students must show their ability to use a range of language forms and functions accurately and appropriately for technical writing with due consideration given to purpose, audience, tone and style.

[3] Developed by Bob Eberle, SCAMPER is an acronym for Substituting, Combining, Adapting, Modifying/ Maximizing/Minimizing, Eliminating/Erasing, Reversing/Recycling/Reusing.

Figure 1 The integrated approach
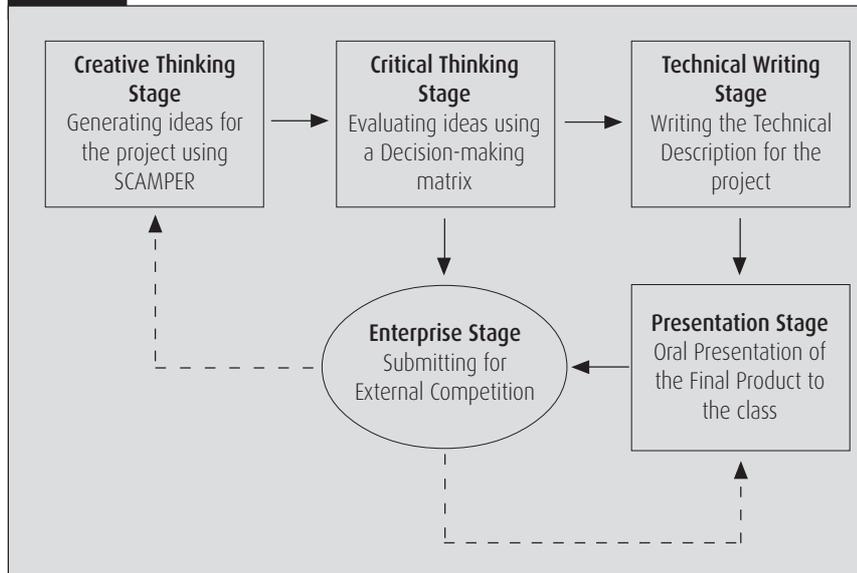
asked by the students) and see how they could improve on the current baby jogger. The purpose of the brainstorming session served not only as an inductive activity to promote creative thinking but also as a formative session in which four students worked together as a team to try to merge different ideas together to come up with a revolutionary baby jogger.

At the Critical Thinking Stage, the students had to consider the quality of the many ideas they had generated by carefully evaluating whether they met the requirements of the task (see Appendix 1). In addition to the criteria that were given to them, the students have to think of two additional criteria that would make their baby jogger feasible for use and commercially successful. A decision-making matrix (see Appendix 3) was used to help students assess the merits and demerits of their ideas. This stage took another 2 hours to complete.

When the core ideas for their project finally materialized, the students then proceeded to the Technical Writing Stage. Altogether, the students had four lessons (8 hours) to imbibe process writing skills as well as learn the different aspects of technical description. The next stage was for the students to make an oral presentation of their final product to their classmates. They had 2 lessons for this stage; one to prepare, the other to present.

The above stages were conducted within the given 8-week time frame. The Enterprise Stage was conducted outside of official curriculum hours. At this stage, students were encouraged to submit their innovative baby jogger for the annual Tan Kah Kee Young Inventors' Award held in Singapore. The award seeks to stimulate creativity among the young generation, inspiring them to constantly think of new and creative ways to solve problems as well as to promote scientific and

technological research in Singapore. Besides briefing the students on the rules of the award, the writer educated the students on the aspects of protecting the intellectual property of their inventions. Herein lies the enterprise aspect of the module as students learned about the differences between patents and registered designs and the concepts of monopoly and exclusive rights of their inventions[4]. From Figure 1, we can see that the Enterprise Stage is represented differently when compared to the other stages as this stage is conducted outside of official curriculum time. The Enterprise Stage helped fulfil the desired I&E outcomes of MOE, i.e. to train students to have 'an enterprising spirit in undertakings'. It is the vital link between what the students learn in a formal institution and the real world. At this value-added stage, students immediately saw the relevance of the skills acquired through the module as they are able to transfer and apply them. This transfer and application is shown by the dotted lines that are pointing away from the oval in Figure 1. Students could see how the concept of enterprise is closely linked to the concept of creativity as the pre-requisite of filing for a patent or registering a design is novelty. Moreover, because students had to seriously consider the commercial value of their products before deciding on whether they should patent and register their designs before submitting their entries so that their inventions could be protected, they had to apply their critical thinking skills at this stage too. Finally, after their entries have been shortlisted, participants have to make a short presentation before a panel of judges.

Incorporating A Three-Pronged Assessment to the Integrated Approach

As the Integrated Approach is perceived as a means of providing a holistic education that supports students' creative and critical thinking and I&E skills in technical writing, a comprehensive three-pronged assessment—assessing technical writing, assessing the thinking of the students and assessing the level of enterprise of the students—should be used to see if learning outcomes have been achieved. This three-pronged assessment is discussed in the next few sections.

■ **Assessing technical writing**

For technical writing, students were assessed according to the following four criteria: Language & Vocabulary, Content & Organisation, Visuals and Creativity. Though their writing ability showed degrees of variation, the 16 students from the writer's class all managed to successfully attain the learning outcomes of technical writing. They were able to use technical definitions for the baby jogger, use well-formed and appropriate language for technical writing, and use appropriate visuals to aid understanding. They were also able to demonstrate an awareness of the purpose, audience, tone and style of technical writing.

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[4] The writer had already discussed the aspects of enterprise with the students during curriculum time.

■ **Assessing thinking**

The students' thinking skills were matched against the ten indicators of intellectual growth suggested by Costa for evaluating thinking. Data collection was done via direct observations by the writer and the notes written by students prior to the interview. The participants come from the same class taught by the writer. A fairly homogeneous group, all 16 participants were ex-ITE students, of average language ability (evident from their English grades) and were a highly motivated and driven lot. Direct observations spanned the 8-week module. Six students were asked to write their thoughts on a series of questions that explored the benefits and shortcomings of the lessons. A sample of these questions included 'What aspects of the lessons on Technical Description have benefited you?', 'What are the skills that you find most helpful in the development of your Technical Description?' and 'In what ways do you think that this module has made you more enterprising?' After that, interviews were conducted with these 6 participants to see if the students had assimilated the concepts of creative and critical thinking into their learning disposition. To maintain spontaneity, the interview sessions were relatively unstructured and not taped to primarily allow the interviewees to express their feelings uninhibited about the 8-week module on technical writing. However, their responses were checked against the thoughts they had written down earlier.

Discussion of findings on data collected

While the marking descriptors for technical description provide a clear outline on whether a student has achieved writing proficiency, the ten indicators provided by Costa (1997) will give a clear picture of whether creative and critical thinking skills have been applied in the classroom.

Direct observations by the writer saw a marked increase in the motivation level of the students. They were definitely more engaged in the task assigned to them, less distracted and more motivated to want to be uniquely different in the development of their product. Because they had gone through the process of generating ideas to personalize the baby jogger, their involvement in the writing was also more apparent. The above observations can be correlated to the notes taken from the interviews and the short notes recorded by the students before the interview. Student A, in his notes, expressed that the lessons were 'fun, [as he] learnt more about the parts of the jogger' while Student C defined the brainstorming stage as fun as 'we can improve on each other's ideas'. Clearly, the urge to want to improve on group members' ideas and term the problem-solving process fun and enjoyable would indicate, in Costa's terms, a surge in students' thinking and that would mean that a particular aspect of thinking skills has been transferred. Moreover, as the students pored over the ideas, the writer observed that they were on task, seriously engaged in using the decision-making matrix as a tool to eliminate ideas which did not meet the task requirement.

Students C and D both expressed the view that the lessons were interesting as 'it actually prepare [sic] us for the real life' and 'our working life in the near future' respectively. The students, when probed further, indicated that they could use the

creative strategy of SCAMPER to generate new ideas for other projects or work they may be involved in future. To that end, according to Costa, when a student finds these skills relevant to real-life situations in a different context, the ultimate goal of teaching thinking skills has been achieved.

Student A expressed that he 'didn't know that so many things can be attached onto the jogger'. When interviewed later, he said that the whole process was fun when he saw how the group managed 'to build idea upon idea' and what was originally a simple jogger for the baby to sleep soon became a potential product of the millennium. Indeed, in using Costa's framework to evaluate this quote, it clearly shows that this particular student had successfully expanded the connections between existing knowledge and new knowledge through the extension and integration of existing ideas. The innovations done by his group clearly illustrated his building idea upon idea. His group had extended the concept of a three-wheelers wheel found in army tanks to the baby jogger to help it overcome different terrains. Moreover, the group also extended the concept of Gore-Tex as a material for outdoor clothes to be used for the cover of the baby jogger to keep the inner environment dry, comfortable and breathable for the baby during inclement weather. Such extensions of ideas clearly indicate an active cerebral involvement in thinking.

Student B confessed that the search for new ideas was 'difficult, we had to find ideas that were not out in the market or that were unthought of' and 'drawing the concept of prototype took some time because it was something new'. When asked to explain why he found the process difficult, he mentioned that he did not want to follow the mainstream and that thinking out of the box required more effort and involved hard work. The comment from this student showed that it is easy to generate ideas but to generate ideas that are unique, that do not follow the market trends requires more effort and hard work. To that end, the writer believes he has exhibited perseverance, an indicator of applying thinking skills, as suggested by Costa. The same student also expressed that 'while discussing within the group, we contributed many ideas even though some ideas were ridiculous'. Here, he showed the flexibility or open-mindedness in thinking, not rejecting the ideas he deemed 'ridiculous' but tolerating them, thus also displaying what Costa termed decreased impulsivity. This student valued the group sessions of brainstorming for ideas as he equated more minds to more ideas. Moreover, he also saw that such group sessions provided the opportunities to get 'to know each other better'.

■ **Assessing the level of enterprise**

As mentioned in the Ministry of Education web page on I&E (taken from http://www.moe.gov.sg/pld/ine/faq.htm), people who have a strong spirit of I&E possess:

- Intellectual *curiosity* (e.g. to question assumptions, explore and experiment) and ability to see things in new ways (e.g. to recognise patterns and make connections)
- Passion, strength of *character*, persistence, resilience and ruggedness
- *Courage* to live with ambiguity (e.g. to seek alternative pathways) and to take calculated risks

- Sense of teamwork and 'giving back' to the *community*

The first two traits in the list above are related to the concept of innovation which is inextricably linked to several of Costa's indicators for thinking. The last two points are more enterprise-related as it involves a willingness 'to try new, untested routes, without undue fear of failure [and] the ability to create and seize new opportunities, rather than increasing efficiency of conventional methods'. Hence, the writer used the number of groups who were willing to submit their improved baby jogger for the Tan Kah Kee Young Innovators Award as a measurement of the level of enterprise in this group of students (http://www.tkk.wspc.com.sg/tkk/foundation/young/invest_eng.shtml). The submission of their projects for external competition was an indication that students were willing to seize new opportunities presented to them despite fears that their entries may not be shortlisted by the judges.

Limitations of Study

The Integrated Approach designed by the writer requires the teacher to go beyond the official curriculum time. This could be a major hindrance for teachers who are already beset with loads of administrative work to clear after teaching hours. The three-pronged assessment to evaluate the approach is also time-consuming especially when assessing the thinking skills of the students as the latter is very qualitative in nature. The two lessons accorded to the creative and critical thinking stages were far too few as thinking is a process-oriented activity that does not occur in a single moment but requires evaluation through time. Moreover, the curriculum time constraint made it necessary for the writer to devise simple activities to separate creative and critical thinking stages. In reality, the two are inextricably linked and it is difficult to differentiate the two.

The direct observation used by the writer is also highly subjective and the challenge would be to come up with a systematic way of collecting and reporting such observations. In addition, data were derived directly from the students' feedback without additional observation conducted by the researcher to verify the accuracy of the statements made. As such, future studies could include a video-taping of the students' interaction and behaviour during a thinking lesson as well as direct observation made by the teachers.

Also, the concept of enterprise in this study is tied to the number of entries that are submitted to the external competition. Clearly, the concept of I&E has more scope than just the ability to see opportunities for entrepreneurship and make money from the patents and registered designs.

It is also important to note that this study does not seek to examine the relationship of the thinking skills acquired and the technical writing ability of the students.

Significance of Study

The Integrated Approach is a model that looks into how the skills of I&E can be integrated into technical writing. It also calls for a combination of alternative

assessment methods to gauge if learning outcomes have been attained. Besides the familiar mode of 'paper-and-pencil' tests, other assessment modes, focusing more on the processes in which the skills are acquired rather than the end-product, have been introduced. With the emphasis on all-round education, the challenge is to move towards a more holistic assessment of learning. The other challenge is to see if there is any correlation between the thinking and enterprise skills acquired and academic performance.

As the enterprise stage is the platform where students see the relevance of the thinking, writing and presentation skills they have acquired, the development of suitable types of assessment modes to measure enterprise skills would indeed be another challenge.

Conclusion

In these transient times when innovation and enterprise are the buzz words in the education arena, the language teaching profession needs to see these changes as opportunities for growth in their area of expertise, to look beyond the conventional methods of language delivery and improvise ways in which a holistic, well-rounded education could be provided for our younger generation. Going beyond the shores of familiarity requires today's language teachers to chart new, untested routes in language teaching and be willing to persevere despite the difficulties and in so doing, exhibit the spirit of I&E.

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APPENDIX 1: Project Specifications and Writing the Technical Description

The situation

You work for a company that manufactures upmarket sports products for yuppies (young urban professionals). Your company has been observing sports and exercise trends of yuppies over the past few years, and has noted that many young couples give up exercising once a baby arrives.

Your supervisor has asked you and three other colleagues to form a team to design an improved baby jogger—a pram that yuppies can use to take their babies along when they go for a jog.

Your team brainstorms for ideas by first identifying the problems of existing baby joggers, and why they are not still not ideal for taking babies out when going for a jog. You then work on a more practical, superior design that overcomes these problems. Your company hopes your newly designed baby jogger will be a commercial success, and persuade busy yuppies to spend time with their babies and keep fit at the same time.

The task

You are to work in a group of four people, including yourself, to design the baby jogger. Your design must meet these minimum design criteria:
- It must be able to manoeuvre across different terrains
- It must hold the baby securely and protect it from strong wind, rain and sun
- It must provide a comfortable ride for the baby

You need to come up with one or two additional design criteria that will help make your baby jogger feasible for use and commercially successful.

APPENDIX 2: Using SCAMPER to generate ideas
(taken from http://me.odysseyofthemind.org/SCAMPERyourwaytocreativethinking.htm)

Substitute: What can you use instead of the ingredients, materials, objects, places, or methods now used? Vegetarian hot dogs and disposable diapers are examples of products which illustrate substitution.

Combine: Which parts or ideas can you blend together? Televisions with built-in VCRs and musical greeting cards are examples of combinations.

Adapt: What else is like this, what can be copied or imitated? Air fresheners that resemble shells and children's beds that look like race cars illustrate adapting.

Modify: Can you change an attribute such as color, sound, taste, odor, form, or shape or perhaps add a new twist? Parabolic skis and scented crayons illustrate modifying.

Magnify: Can it be stronger, larger, higher, exaggerated, or more frequent? Extra-strength medicines as well as over-sized sports equipment and televisions are examples of products that have been magnified.

Minify: Can it be smaller, lighter, less frequent or divided? Wrist-band televisions and 12-hour pain relievers are examples of minifying objects.

Put to Other Uses: Can it be used in a way other than how it was intended to be used? Old tires used for fences, swings, and bird feeders, and the development of snowboards illustrate "put to other uses."

Eliminate: What can you take away or remove? Sodium-free and fat-free foods and cordless telephones are examples of eliminating something.

Rearrange: Can you interchange parts or change the pattern, layout, sequence, or schedule? The new surround sound (360-degree) stereo speakers and vertical paper staplers are examples of rearranging.

Reverse: Can you turn parts backwards, inside out, upside down, or around? Reversible clothing is a classic example of reversing something.

APPENDIX 3: Ideas Generated Using SCAMPER

- mprove on the pram
- suspension on the wheels
- rubber wheel with specific traction
- brake lock
- pillow seat
- adjustable seat
- safety belt
- built-in fan
- water-proof material, Gore-Tex
- extendable transparent sheet
- removable cover for legs

Evaluating the Quality of the Ideas through a Decision-making Matrix

Ideas generated from brainstorming	CRITERIA				
	Able to move over different terrains	Able to hold baby securely	Protects baby from sun, wind and rain	Students' additional design criteria e.g. state of the art	Students' additional design criteria e.g. functional technology
1. suspension on the wheel					
2. rubber wheel with specific traction					
3. brake lock					
4. pillow seat					
5. adjustable seat					
6. adjustable safety belt					
7. built-in fan					
8. Gore-Tex material					
9. extendable transparent sheet					

11 Appreciating Language Contact in Pronunciation Teaching

Local languages' effect on Singapore English

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Despite the recent emphasis on speaking 'good English' in Singapore, pronunciation appears to be paid least attention by the relevant authorities as well as in the classroom. An understanding of the English as spoken in the local context is essential in enlightened pronunciation teaching. After all, in Singapore, other than the official languages, other Sinitic, Austronesian, Indic and Dravidian languages co-exist. Thus, language contact must result and its effects are seen clearly in Singapore English. As illustration, this paper examines the Voice Onset Time of the oral stops of 5 of these local languages, viz. Mandarin, Hokkien, Cantonese, Malay and Tamil, as well as VOT in the English spoken by speakers of these 5 languages. These 5 languages are significant in terms of their usage now, and they were particularly prominent in the language admixture in Singapore during the last three decades, especially while Singapore English (SE) was developing. We predict that VOT patterns in these varieties of SE, for example, reduced aspiration in syllable-initial voiceless stops, match those in the respective local languages. Such a recognition and understanding of the source of features in SE enables a more effective addressing of pronunciation matters in the classroom, and sensibly informs the larger question of what kind of standard, while still internationally intelligible, should be feasibly ascribed to in an appropriate design of curriculum models.

Introduction

Singapore English (SE) is now a well-known and often-described new variety of English. What this paper first highlights is that it is not a monolithic entity, but exhibits ethnic group variation. This fact cannot be surprising. In multi-ethnic Singapore, comprising 76.5% Chinese, 13.8% Malays, 8.1% Indians and 1.6% other ethnicities (Singapore Census of Population, 2001), the languages spoken include not only the official languages of English, Mandarin, Malay and Tamil, but also a variety of other local languages, including Hokkien, Cantonese, Teochew, Hindi,

Punjabi, and many others. Under such conditions where speakers of various languages co-exist and interact, there is inevitably language contact. With a superstrate of English, and various mother tongues[1] as substrate languages, a new code with the vocabulary of the superstrate and structures of the substrate languages emerges (Bao, 1998; Kandiah, 1998). It is well-known that "one of the characteristics of Singapore English is that it shows the transference of features from the various speech varieties spoken by the different ethnic groups" (Ho & Platt, 1993: 8). While there are certainly pan-SE features which have long been identified (see e.g. Lim, 2004a), other features characteristic of the various ethnic varieties have also in recent years received attention and been documented (e.g. Lim, 1996, 2000, 2001). This is not only interesting from the point of view of language contact and socio-indexical variation; such variation also has implications for pedagogy, and this is the second theme that this paper will address.

To this end, this paper presents an investigation of Voice Onset Time (VOT) of the oral stops of a few local languages and of the varieties of SE spoken by speakers of these local languages. We show that VOT patterns in these varieties of SE match those in the respective local languages, thereby suggesting substratum influence.

■ Voice Onset Time (VOT)

It has long been observed that many languages contrast stops[2] through voicing, i.e. vibration of the vocal cords (Lisker &Abramson, 1964). In addition, it is also noted that the stops in some languages like English are also distinguished by aspiration. Aspiration has traditionally been understood simply as the presence of a puff of air which follows the release of a stop consonant. Heffner (1950: 120) offers the following on aspiration: "if the release is impulsive or sudden, the rush of air out of the stopped cavity may be vigorous and puff-like... Stops which have this puff are called aspirated; stops which lack it are called unaspirated stops". Lisker & Abramson (1964) coined the term Voice Onset Time (VOT), a quantifiable measure, which refers to the time interval between the articulatory release of closure and the start of vocal fold vibration. With the moment of release of articulatory closure as the zero reference point along a continuum of possible timing, if vocal cord vibration precedes the release of closure, there will be negative VOT or 'lead time'. If, however, vocal cord vibration occurs after the release of closure, there will be positive VOT, otherwise known as 'short lag' or 'long lag'. The former has VOT values falling into the lower end of the positive range and the latter in the higher end. Of these, it is stop production with 'long lag' that qualifies as aspiration. In a study on the initial stops of 11 languages (Lisker & Abramson, 1964), the VOT continuum is found to allow the two articulatory categories of voicing and aspiration to be combined into a single acoustic dimension (ibid).

Like in many other fields of experimental phonetics, research on the production

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[1] The language one speaks predominantly at home and during informal interactions.

[2] The term "stop" comprises both oral as well as nasal stops. It is a manner of articulation which involves complete closure in the oral cavity. For the purpose of the current study, the term is used to denote only oral stops.

of voicing has centred largely on American accents of English (Docherty, 1992). As for other languages, VOT forms the focus of a number of studies in, for example, Armenian (Hacopian, 2003) and some endangered languages (Cho & Ladefoged, 1999, 2002). VOT has been used to investigate the phenomenon of aspiration in a number of other foreign languages. These include: Danish (Christensen, 1984), Korean (Lisker & Abramson, 1964; Abramson & Lisker, 1972; Han & Weitzman, 1970), Hindi (Lisker & Abramson, 1964; Benguerel & Bhatia, 1980), Maithili (Yadav, 1984) and Swahili (Engstrand & Abdulaziz, 1985).

Work has also been conducted on VOT in SE (Arunasalam, 1984; Tee, 1986; Sng, 1987; Lau, 2002; Huang, 2003). The results of previous studies on VOT of ethnic varieties of SE, however, are not totally comparable due to the many variables across the studies. Only one instrumental study on VOT has been carried out so far which concerns all 3 ethnic SE varieties (Huang, 2003). There is also room for a more thorough investigation through studying both the VOT of the substrate languages of the speakers and that of their respective SE varieties. This will allow for better comparisons and a more complete analysis to be made.

To the best of the researchers' knowledge, other than SE, no study on the VOT of Singapore languages has been carried out. Even though a few of such studies may have been done on Mandarin (Iwata & Hirose, 1976; Chao, 1994) and Cantonese (Iwata, Sawashima & Hirose, 1981), they differ from the respective varieties spoken in Singapore.

Design of the study

■ Languages

The five local languages being investigated in this study—Mandarin, Hokkien, Cantonese, Malay and Tamil—are significant in terms of the extent of their use by speakers now. They were particularly prominent—in the language admixture in Singapore during the last three decades, in particular, while Singapore English was developing. The phonological stop inventories of English and of these 5 local languages are summarised in Table 1. The inventories concern only stops in the syllable-initial position, but also include the allophonic stop variations, which are put in square brackets.

■ Material

In preparing the test words, the factors affecting VOT were taken into consideration. There is a sizeable amount of evidence in the literature which suggests that place of articulation is one of the main factors affecting VOT. Generally, the relationship is such that the further back is the place of articulation, the longer is the VOT (Fischer-Jørgenson, 1954; Peterson & Lehiste, 1960). Other factors affecting VOT include the vowel following the stop, number of syllables, stress, speaking rate, final consonant in the CVC structure and tone. Taking these into consideration, 3 tokens of each stop of all the 6 languages were elicited. Keeping the vowel following the stop constant as /ɐ/, 3 monosyllabic test words were

Table 1   Inventories of stops in the syllable-initial position in English and five other local languages (with allophonic variations in square brackets)

	Bilabial	Dental	Alveloar	Retroflex	Palatal	Velar
English	pʰ (s)[p] b		tʰ (s)[t] d			kʰ (s)[k] g
Mandarin	pʰ p		tʰ t			kʰ k
Hokkien	pʰ p b		tʰ t			kʰ k g
Cantonese	pʰ p		tʰ t			kʰ kʰʷ k kʷ
Malay	p b		t d			k g
Tamil	p [b]	t [d]		(ʈ) [ɖ]	(c) [ɟ]	k g

obtained for each of the stop in all the languages by varying the syllable-final consonant, which are restricted to nasals. In coming up with the test words of the Chinese languages, tones were taken into consideration. In order to minimise any possible effect of tone on syllable-lengthening and thus VOT, all the test words have level tones. Tone Sandhi—"the changes of tone due to the influence of one tone on another" (Ladefoged, 2001a: 238)—is a process which occurs in Mandarin, Hokkien as well as Cantonese. The possible effect of tone sandhi was thus noted. Efforts were made to ensure that upon the process of tone sandhi, the tone of the Hokkien test words would still be level. Tone sandhi in Mandarin concerns only the falling-rising tone (Chen, 2000; Ladefoged, 2001a) and in Cantonese the high falling tone (Bauer & Benedict, 1997), but this phenomenon is not present in any of the test words for the present study. An example of the test words for Mandarin /pʰ/ is as follows:

      [˥ pʰɐn]   攀   (climb)

      [˥ pʰɐn]   潘   (a surname)

      pʰiŋ [˥ pʰɐŋ]   乒乓   (ping <u>pong</u>)

    Keeping all the above in mind and the fact that the study concerns 6 languages, there are inevitably constraints in terms of existing lexical words. Therefore, some of the test words are actually a syllable within existing polysyllabic words. However, only the monosyllabic test words were elicited. In all, 2 nonsense words needed to be used in the English test words. In the case of some of the other local languages, some test words were repeated, so as to yield 3 tokens across all stops.

    Using the monosyllabic test words, a task was designed. Each speaker was given 2 randomised word lists (one in English and one in her mother tongue). Each word list comprises all the test words of that particular language—3 stop tokens for each place of articulation. Each test word in the word list was to be placed within the carrier frame. All the carrier frames contain the same number of syllables. The carrier frame of each word list is in the same languages as the test words. For the local languages, the English idiomatic glosses are presented in brackets next to the test words and carrier frames. Although test words had to be elicited in Hokkien and Cantonese, the word lists and carrier frames for Hokkien and Cantonese are

printed in Standard Chinese orthography[3]. Below is an example of the carrier frame for Mandarin and that of a test word placed within it:

Carrier frame:　念 '他 的 ＿＿＿' 两 遍.

　　　　　　　(Say 'his ＿＿＿' twice)

　　　　　　　念 '他 的 ＿攀＿' 两 遍.

■　**Subjects**

Altogether 20 participants took part in the study, with 4 speakers each from the 5 local languages. The respective mother tongue of each speaker is the language spoken predominantly at home and/or at least 50% of the time, other than English. Subjects are all females aged between 19 to 24 years of age. As a result of being educated under the bilingual education policy in Singapore, which was implemented in 1966, there is an equal or near-equal emphasis on the study of both English and the mother tongue in school. The group of speakers in the current study are thus amongst the younger generation who are capable of speaking educated SE. They are also Singaporean undergraduates or recent graduates from the National University of Singapore (NUS) or Nanyang Technological University (NTU). None of them had spent extensive periods abroad as there may be influence on one's speech due to prolonged exposure to foreign accents. Additionally, none of them had formal training in phonetics. This is to avoid the possibility of unnaturalness in speech as those who had undergone formal training in phonetics may tend to have heightened linguistic awareness. All of the speakers are either friends of the researcher or introduced via a mutual friend. This allowed for a certain level of familiarity between the speakers and the researcher, and thus the recordings would be more naturalistic.

■　**Recordings**

Recordings were done in the soundproof NUS Faculty of Arts and Social Sciences Recording Studio using a Crown Sound-Grabber II PZM Microphone. A Sony MZ-N707 Net MiniDisc Walkman served as the recorder and all recordings were done onto Sony Digital Recordable MDs. The speakers were told to perform the tasks by reading in a consistent rate and that there was no need to inject more emotion or stress in any part of the passages. Phrases containing tokens of the consonants to be investigated were extracted from the MD recordings and input into Kay Multi-Speech Signal Analysis Workstation, Model 3700. Respective waveforms and spectrograms of these segments were obtained at a sampling rate of 22050Hz.

■　**Measurements**

As earlier mentioned, VOT is defined by the time interval between the articulatory release of the stop and the onset of vocal fold vibration (Lisker &

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[3] This did not pose a huge problem as the Chinese languages other than Mandarin appear largely in their spoken forms. Also, all the Chinese languages share a common literary tradition and differ only in terms of a subset of lexical items.

Abramson, 1964; Ladefoged, 2001a). In measuring VOT, the timing at the instance of release of stop closure (T1) and the timing at the start of voicing (T2) are recorded. VOT ((T2 − T1) x 1000) is then calculated by subtracting T1 from T2 and then multiplying the difference by a thousand, so that VOT would be in milliseconds.

The release of the closure of a stop is marked by a sharp spike on both the waveform and spectrogram. On the waveform, VOT is the value obtained from the time interval between the spike to start of the oscillating line, which is an indication of vibration of the vocal cords in the following vowel (Ladefoged, 2001a: 126). On the spectrogram, VOT is measured from the spike to the start of the formants (dark bands) of the following vowel. Auditory perception was also taken into consideration in the current study when taking measurements. Figures 1, 2 and 3 show negative, zero and positive VOTs respectively on both a waveform and spectrogram and the points at which the measurements were taken.

Using the measurements obtained from the task, the VOT of all the stops of each speaker's mother tongue (3 tokens each) were tabulated and the mean values obtained. From these, the group mean value of the VOT of each stop of all the 5 local languages was calculated. The same was done for the 9 English stops of each SE variety.

Figure 1   Negative VOT shown on the waveform and spectrogram
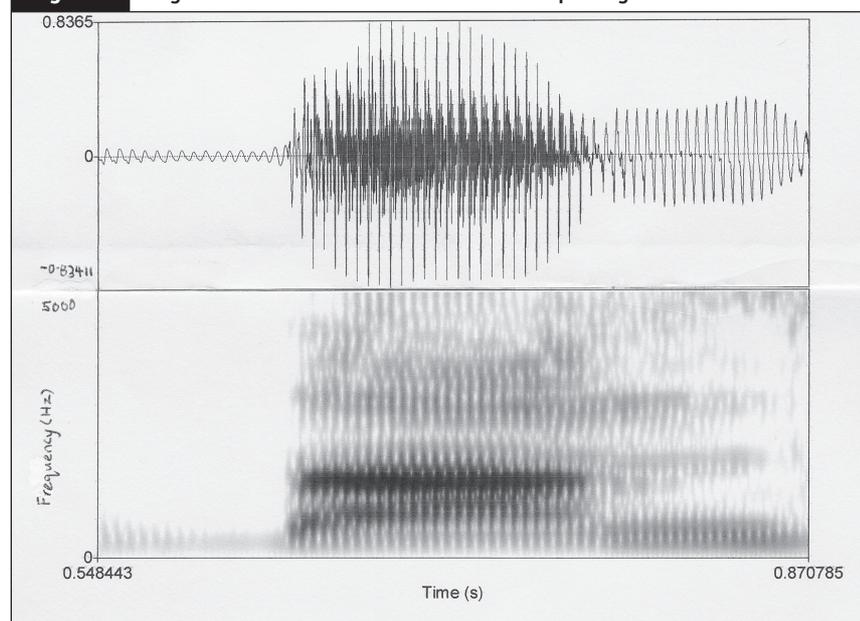
Figure 2 Zero VOT shown on the waveform and spectrogram
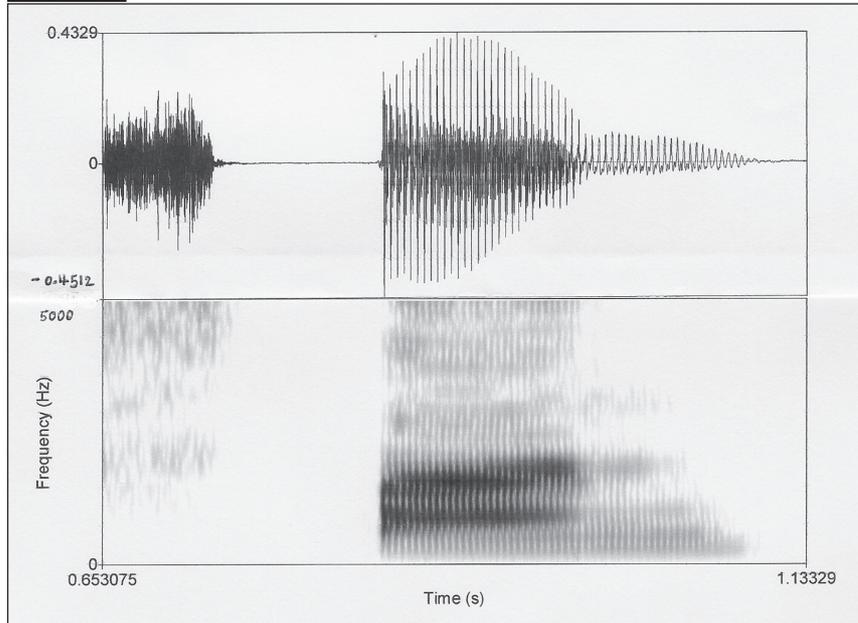
Figure 3 Positive VOT shown on the waveform and spectrogram
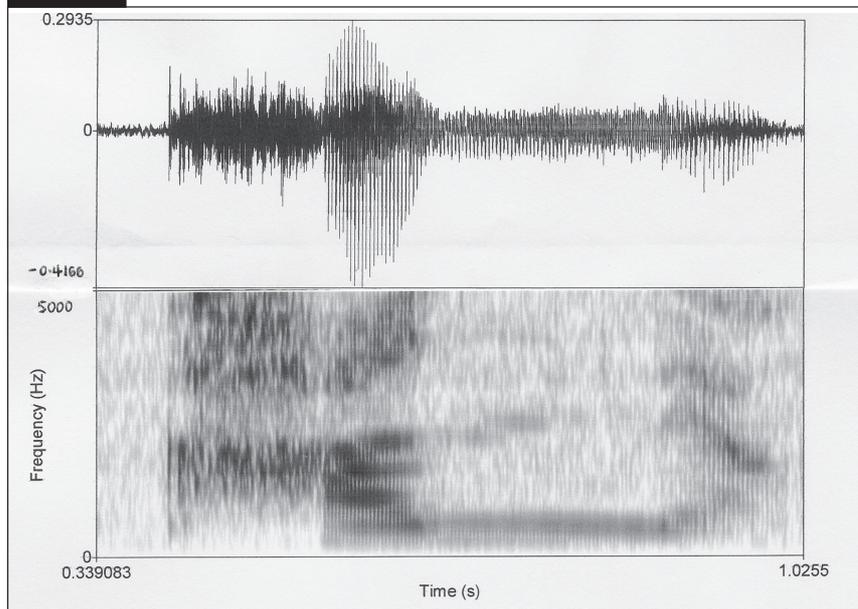
Results and observations

The group mean values[4] of the local languages, pooled across the 3 places of articulation, can be found in Table 2. The group mean VOT value for each of the stops of the various SE varieties is placed after that of the respective local languages. The mean VOT of all the stops (in all places of articulation) in the 5 local languages were also plotted together with the mean VOT of their respective SE stops on a scatter graph, found as Figure 4.

The different shapes represent the stops from the 3 phonological categories, with those in white representing the local languages and black representing the various SE varieties. It should be noted that statistical testing of significance has not yet been conducted. There are many observations which may be made from the findings, but for the purposes of this paper, we will focus on a few salient ones[5], which can also be clearly seen from Figure 4. These may be outlined as follows.

■ **Voiceless aspirated stops**

The category of [voiceless aspirated] stops is clearly distinct from the other stop types in all the SE varieties, as well as in those languages which have them (i. e. the Chinese languages). In the SE varieties, the Chinese language (Mandarin, Hokkien, Cantonese) speakers have a greater contrast between the [voiceless aspirated] stops and the other stops, compared to the Malay and Tamil speakers. Furthermore, the SE of the Chinese language speakers have larger absolute VOT values for [voiceless aspirated] stops compared to those of the Malay and Tamil speakers.

This may be seen to be a result of substrate influence, since the Chinese languages contrast [voiceless aspirated] and [voiceless unaspirated] stops phonemically, while Malay and Tamil do not have [voiceless aspirated] stops in their inventory.

Table 2	Overall group mean values		
	−VC asp	−VC Unasp	+VC
Mandarin	90.567	9.154	-
English	67.550	14.831	8.953
Hokkien	77.601	6.513	8.298
English	86.015	9.350	9.976
Cantonese	104.075	6.048	-
English	77.544	6.995	9.107
Malay	-	16.599	11.643
English	51.226	13.130	12.343
Tamil	-	19.013	10.503
English	48.887	12.832	1.568

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[4] As it was found that there was stark inter-speaker variability in certain instances, thus skewing the group mean value, the group mean was therefore taken to be that which is calculated based on the 3 speakers whose mean values show the least discrepancies.

[5] For a more comprehensive account of results and discussion, see Ng (forthcoming).

Figure 4 Group mean VOT of the stops of local languages and their respective SE varieties
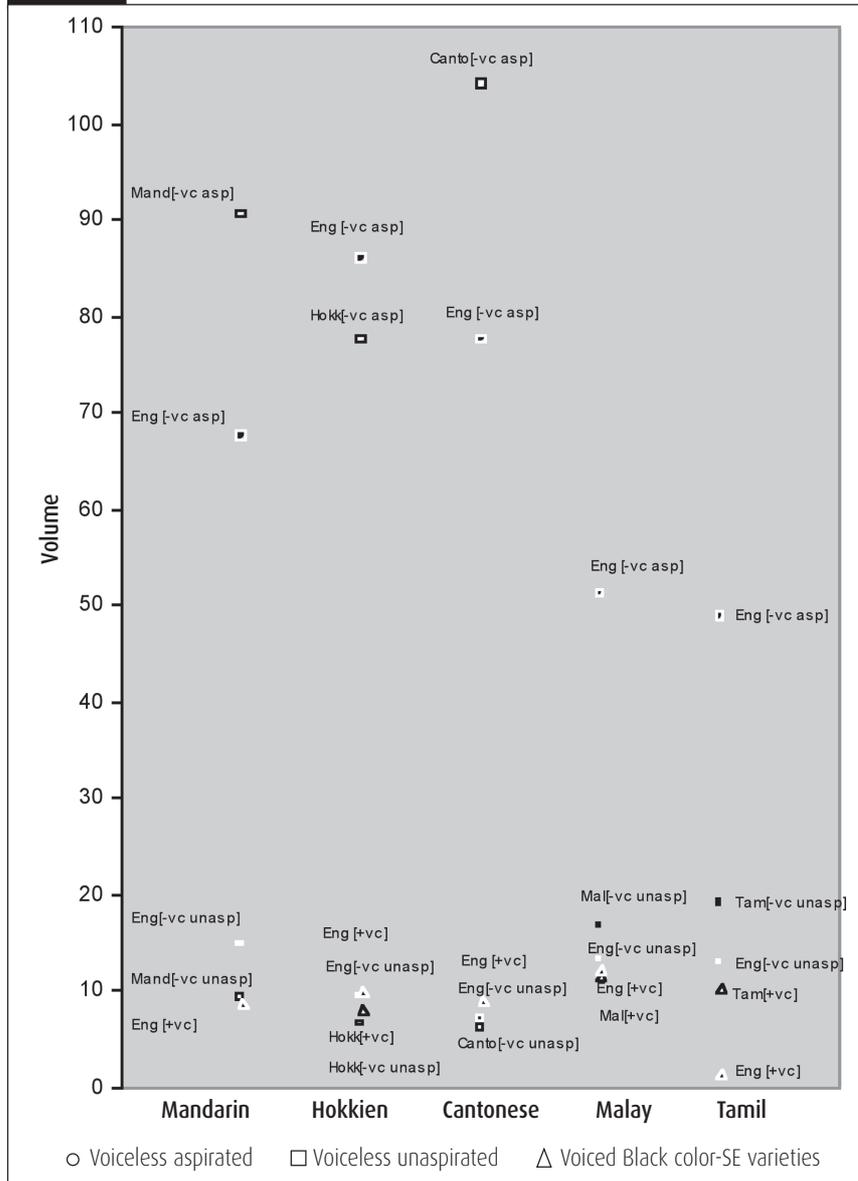
■ **Voiceless unaspirated and voiced stops**

The VOTs of [voiceless unaspirated] and [voiced] stops in the SE of the Chinese language speakers are very close, and certainly do not appear to be significantly different in the Hokkien, Cantonese and Mandarin speakers. Conversely, there is a clear difference between these stop types in the Tamil speakers' SE.

This may be explained by the fact that at least in Mandarin and Cantonese, there are no [voiced] stops, and that in Hokkien, contrast between [voiceless unaspirated] and [voiced] stops are found only in the bilabial and velar places of articulation. [Voiced] stops are, however, present in Tamil.

■ **Voiced stops**

It should also be noted that while [voiced] stops would normally have negative VOT, they are often voiceless and have small positive VOT values in English (Ladefoged, 2001b: 119-120). Indeed, for most of the speakers, the values are positive, except for the Tamil speakers who do have negative values in their SE in the bilabial and alveolar place of articulation. Figure 1, however, shows a positive value for the [voiced] stop of the Tamil speakers as it represents an overall mean pooled across the three places of articulation.

Aside from the general patterns which have been mentioned above, the study also yields other observations which call for further investigation and will be covered in greater detail in a fuller version of this paper (see Ng, forthcoming).

Implication for pedagogy

It has been recognised especially in recent years that the phonological and grammatical system of SE is quite different from that of the goal that is theoretically ascribed to, whether RP, GA, etc. Recent work on SE contributes to the crucial understanding of possible reasons underlying the phonological patterns found in SE. Acknowledging and accepting that such patterns are in fact rule-governed, and subject to common natural processes in language change and language contact, is important for the learning process. Knowing that there is a systematic basis for certain features in SE, one can compare and contrast them with a more standard version of SE or other 'more standard' English variety that one holds as a goal to ascribe to. This makes it clearer to learners in two ways: (i) that they are not 'lazy', which is an important psychological step; and (ii) that pinpointing specific areas of difficulty will make it more focused and easier to attain the goal.

The findings from our study go further than this, because we are not only concerned with a pan-SE. It is already clear in theory that the different local languages with which SE comes into contact have different phonemic systems. Adding to the growing recent research on ethnic differences in SE (e.g. Lim, 1996; Tan, 1999; Lau, 2002; Huang, 2003; Lim, 2004b), our study provides experimental evidence that there *are* differences in segmental realizations in SE spoken by speakers from different ethnic groups, which can be related to the respective substrate languages. As there are different rules and patterns in these different ethnic varieties of SE, there are different areas of potential problems or difficulties for speakers of different language backgrounds when speaking English. An awareness of these should make a positive contribution to pedagogy. Material and curriculum which are sensitive to and which cater to these differences are naturally more focused and must better aid the learner and speaker of English.

It has been argued that for the purpose of English for international

communication (EIL), what is required is for speakers to share a common pronunciation core rather than to adapt to a particular prestige accent (Jenkins, 2000, 2002). Through analysis of speech data of speakers from various language backgrounds, it was found that it is important for pronunciation to be target-like in the areas which have been identified to threaten intelligibility in EIL communication. These areas which are termed the 'Lingua Franca Core' have been advocated to form the focus of teaching of production (ibid.).

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