The Open University

PUTTING THE STUDENT FIRST
LEARNER-CENTRED APPROACHES IN OPEN AND
DISTANCE LEARNING

COLLECTED CONFERENCE PAPERS

Edited by
ALAN TAIT

SIXTH CAMBRIDGE INTERNATIONAL CONFERENCE ON OPEN AND DISTANCE
LEARNING, 3 - 5 JULY 1995

in collaboration with Empire State College, State University of New York

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FOREWORD

Putting the student first: rhetoric or reality? Marketing slogan which dissembles in an educational environment of ever greater volumes, complexity and alienation, or the cornerstone of an array of practices underpinned by educational philosophy which is at the heart of revolutionary change? Any contemporary reader is entitled, indeed professionally obliged, in a world where terminology is routinely used in the ways which were foreseen by Orwell, to maintain critical faculties and ask difficult questions. In other words, don't just read the brochure, find out what is actually happening.

As one of those responsible for the title and theme of the sixth Cambridge International Conference on Open and Distance Learning, I am pleased to say by way of introduction that the critical spirit which has informed all the Cambridge Conferences is alive and well and represented in this volume of conference papers. The papers demonstrate in the variety of their provenance the international nature both of the occasion and of the issues; open and distance learning and student-centred approaches are clearly global movements. The range of very different approaches raises some central questions too about the separateness of distance learning. The use of information and other new technologies in the educational context, along with the deconstruction of the curriculum and the increasingly multi-institutional and consumer driven nature of many programmes of study, serve to draw together what has been termed (now wholly inaccurately) 'conventional education' and 'distance education'. To put it in other words, learner-centred may survive longer than distance as a decriptor.

A commitment to student or learner-centred approaches is one of the common areas in which educators who see themselves as coming from different backgrounds can meet, and indeed this conference and collection of papers demonstrate the necessity of this. The partnership with Empire State College, State University of New York, which Roger Mills and I have enjoyed in the direction and planning of this and other conferences has educated us over the years from this point of view, and our acknowledgement is willingly given to the two colleagues there who have given so much time to the partnership between their institution and ours, Dr Daniel Granger and Dr Elana Michelson.

Alan Tait

Open University, Cambridge, UK

CONFUCIUS RULES OK?
Cultural Influences on Distance Learners in Asia

Adrian Allen
University of Southern Queensland
Australia

Introduction

One of the central functions of any education system is to pass on to the succeeding generation the values and social mores of a particular human group. Whilst there is considerable agreement between different groups as to what is considered important to pass on, there are nevertheless significant differences in emphasis and in the educational techniques adopted.

The education systems in East Asian countries such as Korea, Japan, Taiwan, Hong Kong and, before the 1949 communist revolution, China, are all strongly influenced by the ethical principles espoused by Confucius more than 24 centuries earlier. He articulated a number of core values which, after his death, came eventually to occupy a central place in East Asian societies. In more recent times, southward immigration from China led to the spread of Confucian values into Southeast Asian countries such as Malaysia and Singapore.

This study seeks to explore differing degrees to which Confucian elements in the learning styles still occur amongst Distance Education students in Singapore, Malaysia and Hong Kong. It also uses as a comparative group a sample of Australian students. All groups study with the University of Southern Queensland. Having established the existence and significance of any Confucianist approaches to learning, the paper concludes with suggestions as to how these students can take greater control of their own learning processes.

But first, what are the essential Confucianist characteristics that have traditionally exerted such a pervasive influence on East Asian educational systems? Briefly, they may be summarised as follows:

- Filial piety, associated with male dominance and a distinctive family role for the first-born male.

- An acceptance of distinct social ranking in society, with high status being accorded educated people.

- A strong emphasis on personal discipline; patience; respect for and acceptance of authority; avoidance of aggression and confrontation.

- The notion of knowledge being masculine and male teachers having a very high degree of authority.

- A concern for the intrinsic value of knowledge and the concept of the 'complete person' (true gentleman) perfected through education.

- An essentially conservative approach to problem-solving, often relying on the careful scrutiny of past events.

- To search for the middle ground (doctrine of the mean) in a polarised argument.

- A strong literary (even scribal) tradition, rather than oral and a consequent high regard for the authority of the printed word.

(A small selection of relevant reference material is included in the bibliography - see for example: Hofstede (1980), Ho (1981), Wu (1980).

Methodology

Nearly 2000 surveys and survey reminders were distributed by mail to all USQ students studying in 1994 in Singapore, Malaysia and Hong Kong. The same survey, containing 40 questions using the Likert scale, nine biographical questions and three open-ended questions for later content analysis were also distributed to an Australian group of USQ students. Useable surveys resulted in 'N' values of 100 for Hong Kong, 112 for Singapore, 116 for Malaysia and 236 for Australia - in all 564 surveys as the data base. Although the original intention of this survey was to include students with an Islamic cultural background, it was apparent from an analysis of the biographical questions which included religion, language spoken at home and nationality, that only two students fell into this category. It is known therefore that all the students from Hong Kong and Singapore and 98% of the students from Malaysia are of Chinese cultural background. This article, then, is essentially about students with Chinese cultural background and those without (from Australia).

These were programmed through SPSS system to provide progressively more detailed information, from summing the data for each reply, through cross-tabulation using the four nations, then analysis of mean values and standard deviations through to cluster analysis and correlation coefficients. (All data is significant at the 0.01 level of confidence unless otherwise noted). Post survey field interviews took place with educational experts from Asia.

In this paper, four areas of particular relevance to the conference theme of 'how the learner learns' have been selected for close analysis. For reasons of space, only summary statements and a bare minimum of statistical data have been physically included here. Greater supporting evidence may be obtained from the author.

A.   The Student: Self, Gender and Group

Using standard personality questions to explore the whole surveyed group, on the introvert-extrovert scales, approximately equal numbers of each category exists, but when explored regionally Australian students showed highest levels of self esteem, with Malaysian lowest.   Measurements of 'out-goingness' resulted in Australian students highest, followed by Hong Kong, with Singaporean students recording least strongly.

When asked *whether they cared more about other people's feelings than their legal rights* - perhaps a more humanistic orientation, Australians polled highest with 61 percent agreeing and nearly three times as many Singaporeans, Hong Kong students and Chinese Malaysians providing negative answers.   Of the students in these three centres, the Malaysians were less legally inclined and more people-oriented.

Concerning gender, 46 percent of the survey were women and 50 percent were male (four percent unrecorded).   Whereas, females dominated the survey in Australia two to one, Hong Kong males were three times more numerous than females.   Malaysian Chinese had the best gender equity at 65 males to 43 females.

When questioned about *preferring to seek out other people's viewpoints before expressing their own opinion*, 56 percent of the survey agreed, with another 29 percent disagreeing.   Malaysians polled highest with a whopping 70 percent positive, whereas most dissent came from Australians.   (The mean values being 2.41 and 2.80 respectively).

If we focus in on the relationship between wanting to seek other's opinions first and strong positive correlations with other questions in the survey, then the following picture emerges.

Figure 1

I am expected to bring honour to my parents by excelling in my studies.

+

I prefer to seek other people's viewpoints before expressing an opinion myself.		I see other students in the group as potential friends to share experiences with.

+

+

I find cooperative learning experiences helpful to me as a student.

+

+

+

I feel uncomfortable presenting a view that challenges the stated position of my lecturer/tutor.		When set group projects, I usually find they lead to cooperative preparation of assignments.

If there are two possible viewpoints in a controversy, it is up to my lecturer to decide which is preferred.

+   +

Even if my own experience tells me something in the study materials is wrong, it is rude to criticise it.

-

If I receive a low grade for my assignment, I can't understand why.

The only negative correlation (again at the 0.01 percent level) was with:

If given the choice, I learn better by listening than by reading.

In terms of student *preferences for working alone rather than in groups*, the following pattern emerged. 49 percent of those surveyed agreed, with 40 percent disagreeing, clearly a divided house. Malaysian Chinese favoured group work most (60 percent), way ahead of Hong Kong (42 percent), Singapore (36 percent) and Australians least enthusiastic about group work (32.5 percent). (Tang 1993, has discussed this for Hong Kong).

Analysis

Perhaps it is possible to make the following observations with regard to the reference point of Confucianist values. Asian students are socialised to be less extrovert, more concerned with rules and regulations, less concerned with people's feelings but still very concerned about what other people think - a sounder basis for consensus type decision making. It also seems that males are disproportionately represented in distance University learning.

Furthermore, from Figure 1 a pattern is starting to emerge that reinforces not only the concern for other people's viewpoints, but a deference to those in authority, by these Asian students.

Most significantly, the picture being created by distance learners in Hong Kong, Malaysia and Singapore, despite the shared Chinese cultural base, is one of distinct difference. Most evident - and this will be reinforced by subsequent data, Malaysian Chinese appear to have adopted what might be considered a Malay-like approach to learning and to other learners (for an elaboration of this point, refer to Nasser, 1987 and Zubir, 1988).

B.   The Family and Learning

The family held centre stage in the confucianist view, both as a microcosm of how to run the state and also as a powerful central influence dominating over the wishes of the individual. 'For the sake of family' was an undeniable motive.

So asking a student whether *as an adult, it is important for me to make my own way in life, independent of my family* could be revealing. 76 percent of those surveyed were in agreement, with 16 percent disagreeing. Only eight percent were undecided or not sure. Malaysians were the most independent with Australians and Hong Kong students least. However, Hong Kong and Singaporean students had the highest levels of disagreement with the statement, polling 19 percent and 16.5 percent respectively.

When gender was taken into account in relation to being independent, all males polled as more individual than females and in the same sequence as before, with Malaysians still heading the list and Singapore second.

If the place in the family is considered, ie first child, second child etc, then the independence for the first born child is greater, with a substantial drop in independence for

second or later children in all but Singapore where the desire to be independent of family actually rose with the second child. Malaysia still headed the list on the desire to go-it-alone.

With respect to correlation with other questions asked, there was a positive relationship with students encouraged by role modelling, a negative relationship with honouring parents and a negative correlation with a preference for listening over reading (but all of these are the 0.05 percent level of confidence).

Further enlightenment occurs when considering the responses to *during my childhood my parents would encourage me to be eg 'like a doctor' or 'like a business person'*. 57 percent of all responses were negative, but of these, the highest proportion was 70 percent of the Australians, with the most positive being 46 percent from Malaysia. (Hong Kong 33 percent agreement, Singapore 31%, Australia 20 percent).

This role-modelling technique of encouragement is used significantly more for males than females in all four geographical areas but when it comes to first children, Australia and Hong Kong stand out, but both Malaysia and Singapore appear to use this technique more with second and subsequent children in the family.

If we look at socio-economic status as measured by the number of degrees in the family, then this role model technique appears in Asia (but not Australia) to be used to a greater extent in lower socio-economic groups than in higher. (For further discussion see Zhang, 1993).

With no strong positive links, the following *negative* correlations between role-model encouragement and other survey factors (at the 0.01 percent level) are set out in Figure 2 below.

Figure 2

I am expected to bring honour to my parents by excelling in my studies.

During my childhood my parents would encourage me to be eg 'like a doctor' or 'like a business person'.

My family have given up a lot to enable me to undertake university study.

When I receive my study materials I read them all from cover to cover.
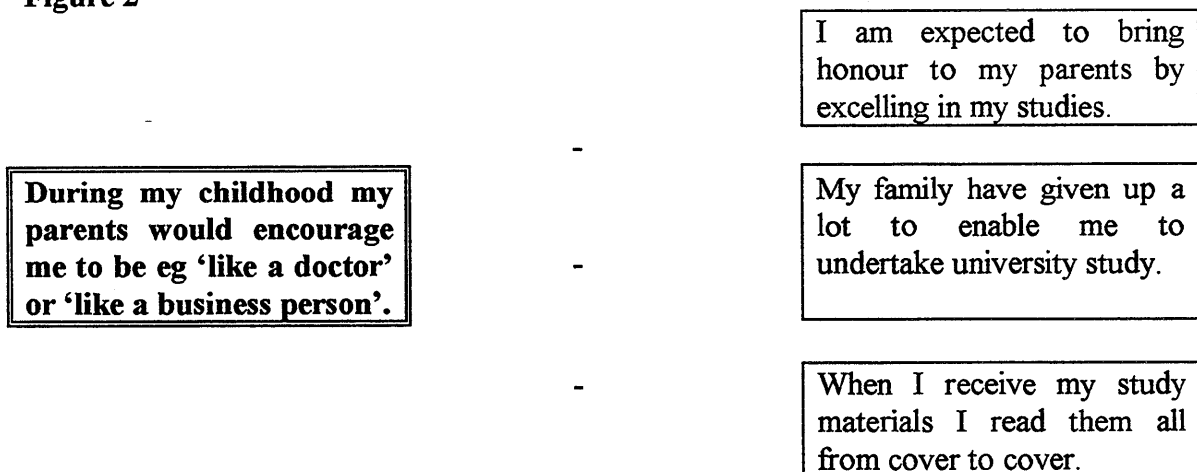
When exploring the notion of filial piety and family honour the responses are very revealing. In answer to the statement *I am expected to bring honour to my parents by excelling in my studies*, 53 percent of all surveyed agreed, with 30 percent disagreeing. When broken down regionally, Australians were least enthusiastic with only 27 percent positive, whilst 78 percent of Malaysians supported the statement, followed by Singapore (66 percent) and Hong Kong (57 percent).

In each case a slightly higher frequency occurs with those who are working for the family's first degree rather than families with more than one degree holders.

The analysis of correlations with other questions strongly reinforces a bunch of Confucianist-type values, as shown in Figure 3.

Figure 3

		I prefer to seek out other people's viewpoints before expressing an opinion myself.

+

I am expected to bring honour to my parents by excelling in my studies.	+	My family have given up a lot to enable me to undertake university study.

+

+   +

I find cooperative learning experiences helpful to me as a student.

+

If there are two possible viewpoints in a controversy, it is up to my lecturer to decide which is preferred.

I believe female lecturers/tutors have less knowledge/authority than males.	+	The social ranking of people so that some are superior and others inferior, is a necessary aspect of society.

+

If I receive a low grade for my assignment, I can't understand why.

When I receive my study materials I read them all from cover to cover.	+

When organising study tasks, I like to find out what is needed as I go, rather than planning in advance.

In regard to student perceptions of whether their *families had given up a lot to enable them to undertake university studies* answers were split between 45 percent who agreed and 41 percent who disagreed. Of these, Malaysians polled 70 percent who agreed, with Hong Kong and Singapore least with 31 percent agreement. 59 percent of Hong Kong

and 51 percent of Singaporean students disagreed, with Australian votes bisected at 44 percent for and 43 percent against the statement.

Analysis

In the case of the Malaysian Chinese some interesting features emerge. The high level of expressed independence from family, especially amongst males seem to run contrary to Confucianist principles of family solidarity. So do the negative correlations between role-model encouragement, family honour and family sacrifice. So what is emerging here is a picture of those children who were encouraged by role-model examples not holding a great deal of traditional family respect or appreciation of any sacrifices the family might have made, although the higher Malaysian values compared with elsewhere are perhaps because Malaysian standards of living are lower, University education is still relatively more expensive and family size is on average larger than in the other three geographical areas. In Australia only a quarter of the students feel their parents are a motivation for high achievement. Despite this apparent individualism, it is still the Malaysian Chinese who are more inclined to bring honour to the family through excelling in their studies and, as Figure 3 demonstrates, those who are most in support of this idea and quite overtly Confucianist in several other significant ways too. Malaysian Chinese may be people-oriented (so they are go-it-alone achievers who are not going to be heavily dependent on family). Generally, Hong Kong and Singaporean students were least concerned to be independent and so, in this respect, mildly Confucius in learning. They were also mildly positive about bringing honour to their families by successful study and in so doing allied themselves with other Confucianist values in Figure 3, but did not feel in any large numbers that there had been sacrifice by their families to get them through university. Australian students felt this more strongly.

In sum, a weakening of Confucianist family values is occurring at different rates in the region with the rise in individual career ambition.

C.   Authority

The demarcation of authority in traditional Confucianist society was very clear. Males, the educated and the older, had the upper hand. In response to the statement *the social ranking of people so that some are superior and others inferior is a necessary aspect of society*, students polled 34 percent agreement and 47 percent disagreement. When dissected regionally, only 16 percent of Australians agreed, with a whopping 63 percent in disagreement. Malaysia had the next greatest disagreement (48 percent) followed by Singapore (38 percent) and Hong Kong recorded least disagreement with 27 percent, but over half in favour (the highest).

In every area, more men agreed with this statement than women! In Singapore and Australia, women students held relatively more strongly to the negative view than the women in Hong Kong or Malaysia.

Set out below in Figure 4 are the strong positive correlations that developed between social ranking and other questions.

Figure 4

	I am expected to bring honour to my parents by excelling in my studies.

+

| The social ranking of people so that some are superior and others inferior is a necessary aspect of society. | + | If there are two possible viewpoints in a controversy, it is up to my lecturer to decide which is preferred. |

+

+

| | I believe that female lecturers/tutors have less knowledge/authority than males. |

+

+

| If I receive a low grade for my assignment, I can't understand why. | | I think browsing is a waste of time, so I only study seriously what is given out in class or in my study guides. |

+

| | When I receive my study materials I read them all from cover to cover. |

| If I have worked hard and fail, it must be the fault of the lecturer. |

Students who responded positively in this way replied in significantly negative numbers to *stress before exams and using unsourced materials in their assignments*.

Further positive reinforcement to this pattern of related values is provided by an analysis of answers to the authority vested in the lecturer to decide for the students the 'correct answer'. For the sake of brevity the responses to the statement that *I am dependent on the skills/knowledge of the lecturer/tutor to achieve a high grade in the subject* have been omitted, but give heavy support to linkages common to both Figures 4 and 5.

Figure 5

I prefer to seek out other people's viewpoints before expressing an opinion myself.

+

If there are two possible viewpoints in a controversy, it is up to my lecturer to decide which is preferred.

+

I am expected to bring honour to my parents by excelling in my studies.

+

+ +

+ +

+ +

+

The social ranking of people so that some are superior and others inferior, is a necessary aspect of society.

I feel uncomfortable presenting a view that challenges the stated position of my lecturer/tutor.

+

I think of the lecturer as a guide for my learning.

Even if my own experience tells me something in the study materials is wrong, it is rude to criticise it.

I am dependent on the skills/knowledge of the lecturer/tutor to achieve a high grade in the subject.

+

If I receive a low grade for my assignment, I can't understand why

I think browsing is a waste of time, so I only study seriously what is given out in class or in study guides.

I believe that female lecturers/tutors have less knowledge/authority than males.

+

If I have worked hard and fail, it must be the fault of the lecturer.

Memorisation is an essential route to understanding concepts.

When organising study tasks, I like to find out what is needed as I go, rather than planning in advance.

It is worth noting as background that one third of all Asian students went to make up these connections (with only one in ten Australians contributing). Singapore had by far the least denials (37 percent) but with 31 percent not sure or having no opinion.

Concerning the authority of females as teachers, most students don't seem to have an obvious gender bias, with 96 percent of Australians disagreeing with the statement *I believe that female lecturers/tutors have less knowledge/authority than males* and the lowest disagreement Singapore (74 percent) with a sizeable 20 percent being unsure or having no opinion. It is gratifying that this question rated the most clear-cut (negative) response of all in the survey. Students with low self esteem and strongly entrenched Confucianist tendencies polled most positively. (This will be the subject of a further paper).

Also on the issues of gender, it was noteworthy that when analysing student responses as to whether they *felt uncomfortable presenting a view that challenged the stated position of their lecturer/tutor*, it was Australian and Singaporean women who felt this least.

When asked to react to the statement that *even if my experience tells me something in the study materials is wrong, it is rude to criticise*, 73 percent of all students disagreed. On the other hand, opposition was greatest from Malaysia. Support was highest in Hong Kong and Singapore, where 18 percent agreed and another 10 percent were undecided.

Analysis

There seems to be a core of Confucianist influenced students who are comfortable with the idea of social ranking, especially in Hong Kong and Singapore. Australian opinions tend to reinforce the national stereotype of an 'egalitarian society'. Men, as the power brokers are more keen to support this idea than women - so what's new! Australian and Singaporean women were in most disagreement with the statement.

These assertions are strongly reinforced by the clusters of overlapping Confucianist values detailed in both Figures 4 and 5. The unassailable position of the tutor/lecturer comes through as well as the heavy dependence on this high status figure as *the* unquestioned source of knowledge. The close link between student success and the involvement of the teacher is alarming from a western university standpoint. Furthermore, the tendency for a passive learning style is emerging, as will be noted in the next section.

The highest elements of male chauvinism appear to be located in Singapore more than anywhere else. Singaporeans, too, have the greatest dependency on their teachers for their scholastic performance and their problem solving.

Both Singaporean and Hong Kong students undervalue their own personal experience, choosing, rather, to support the text book view, indicating a higher emphasis being placed on the authority of the printed word. Interestingly, Malaysian respondents had much less

regard for the authority of text than any others, including the Australians. Related to this is the response to a later question in the survey which indicated that over half of the Chinese Malaysian students preferred to learn by listening rather than reading, with only 28 percent preferring the reverse. Is this a further example of the Malay Islamic mode of teaching being absorbed by the Chinese? Clearly further research is needed here.

D. Learning Styles

Because of the large amount of data generated in this area from the surveys and interviews, only three questions that relate *directly* to traditional learning approaches will be discussed here. These explore the dilemma between honourable copying from the masters or plagiarism; the doctrine of the mean (balanced order); and memorisation as a learning technique.

In answer to the statement *I include unsourced pieces of another writer's text in my assignment, for their words are better than mine,* 28 percent agreed, 17 percent remained unsure or had no opinion and 54 percent disagreed. When broken down regionally, the bulk of the objectors were Australian (80 percent of them) but for those in favour, Hong Kong polled by far the highest with 55 percent following this practice and another 20 percent uncertain. Next highest in agreement was Malaysia (40 percent), then Singapore (28 percent) and Australia (10 percent).

From a cluster analysis of 'it's rude to criticise' and 'correct answers in the text' and 'inclusion of unsourced writing', there is a dramatic polarisation of the mean scores, keeping to this same sequence.

When comparing the responses to the initial statement with the prevalence of English language some relevant observations can be made. The following table is helpful.

Table 1

Language Usually Spoken at Home (percent response)

Group	English	Mandarin	Hokkien	Cantonese	Other Chinese	Malay	Other	Total
Hong Kong	0	1	0	99	0	0	0	100
Singapore	27	23	15	11.5	17	3	3	100
Malaysia	15	13	25	30	11	1	4	100
Australia	91	0	1	3	0	0	5	100

Clearly, the relationship between unsourced work of other writers and language proficiency is a close one, but certainly not the only influence. Figure 6 below reveals through *negative* correlations (0.01 level) a rather more complicated picture.

Figure 6

I am expected to bring honour to my parents by excelling in my studies.

I include unsourced pieces of another writer's text in my assignment, for their words are better than mine.

The social ranking of people so that some are superior and others inferior, is a necessary aspect of society.

If there are two possible viewpoints in a controversy, it is up to my lecturer to decide which is preferred.

I think browsing is a waste of time, so I only study seriously what is given out in class or in study guides.

I believe that female lecturers/tutors have less knowledge/authority than males.

If I receive a low grade for my assignment, I can't understand why.

In resolving conflicts, I try to reconcile differing viewpoints rather than using critical analysis.

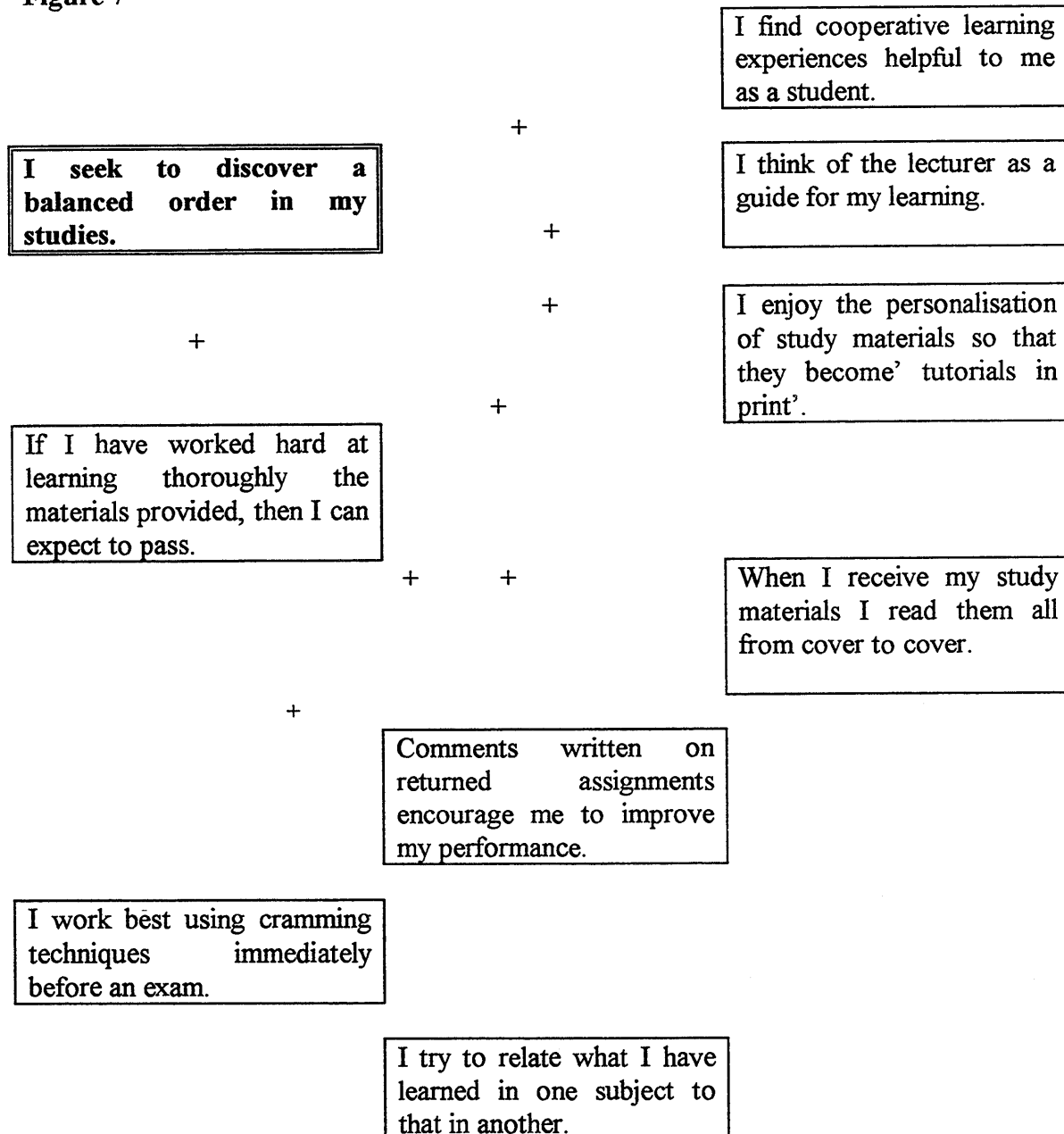If I have worked hard and fail, it must be the fault of the lecturer.

Here, a rejection of six or seven traditional Confucianist values has taken place. An exception is the support given to browsing which might point the value of learning in its own right.

Turning now to the concern for order, students responded in the following way to the statement *I seek to discover a balanced order in my studies.* 78 percent agreed with only 5 percent disagreeing When the responses were broken down by region and scaled

according to the mean values, Hong Kong emerged as being least concerned with this approach, followed by Australia, Malaysia, then Singapore.

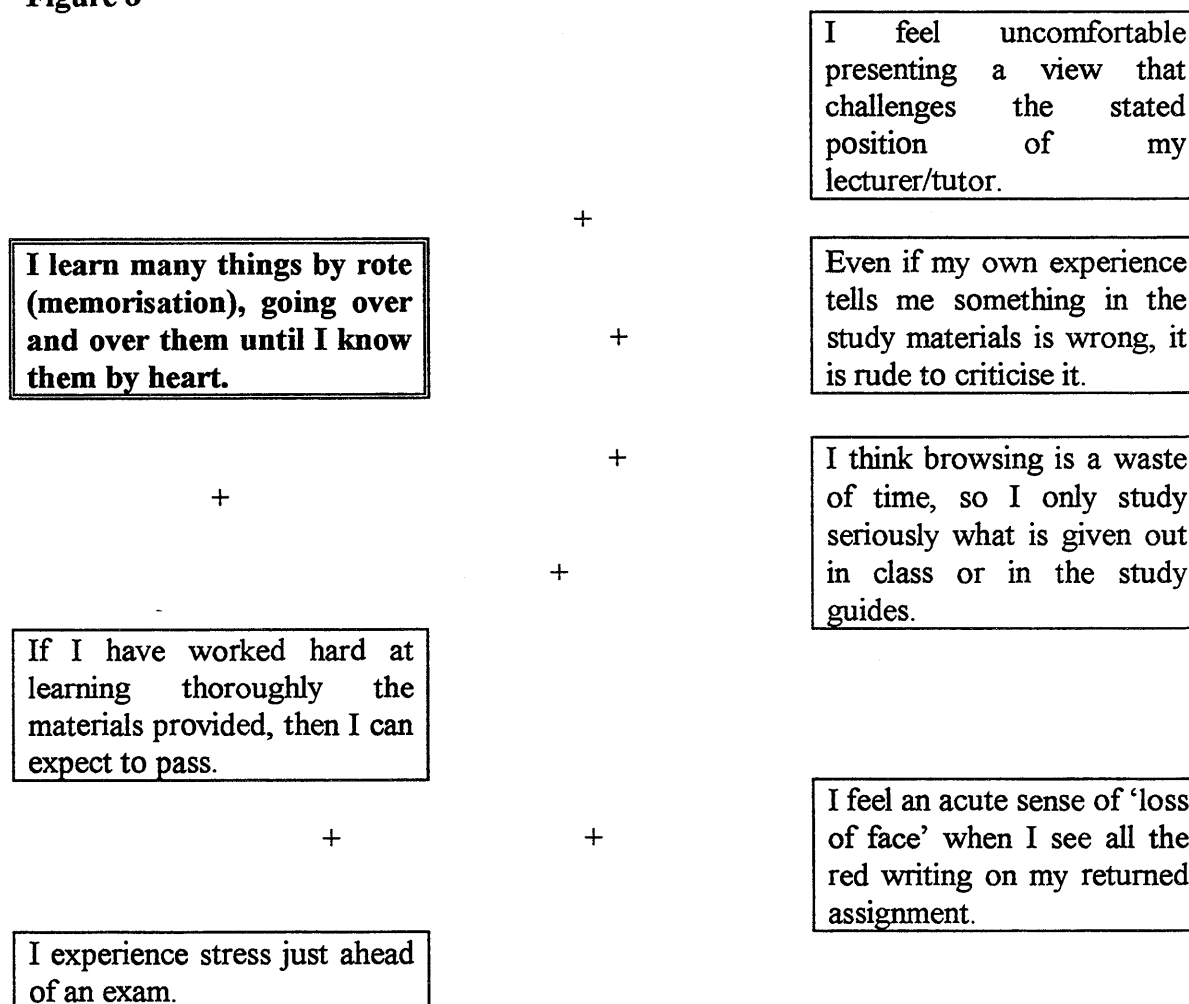The significant positive correlations are set out in Figure 7.

Figure 7

	I find cooperative learning experiences helpful to me as a student.

+

I seek to discover a balanced order in my studies.	I think of the lecturer as a guide for my learning.

+

+

	I enjoy the personalisation of study materials so that they become' tutorials in print'.

+

+

If I have worked hard at learning thoroughly the materials provided, then I can expect to pass.	

+   +

When I receive my study materials I read them all from cover to cover.

+

Comments written on returned assignments encourage me to improve my performance.

I work best using cramming techniques immediately before an exam.

I try to relate what I have learned in one subject to that in another.

The third and final revelation about learning styles centres on responses provided by students to the statement *I learn many things by rote (memorisation), going over and over them until I know them by heart.* This measure has been used by Biggs and others on numerous occasions and in different cultural settings eg refer to Biggs, 1991, Kember, 1994, Kember and Gow, 1991.

49 percent of respondents agreed, with another 39 percent disagreeing. When broken down by area, the results were very surprising with 72 percent of Australians supportive and only 28 percent of Malaysians. Singapore had 35 percent and Hong Kong 45 percent. (High levels of rote learning amongst Australians have been reported by e.g. Gow, 1994.)

Although it has been shown earlier that using unsourced work of others is related to English language proficiency, it is evident from this order just observed, that using rote learning as a technique is not related to English competency. What it *is* correlated with is shown below in Figure 8.

Figure 8

| I learn many things by rote (memorisation), going over and over them until I know them by heart. | | I feel uncomfortable presenting a view that challenges the stated position of my lecturer/tutor. |

+

+

Even if my own experience tells me something in the study materials is wrong, it is rude to criticise it.

+

I think browsing is a waste of time, so I only study seriously what is given out in class or in the study guides.

+

+

If I have worked hard at learning thoroughly the materials provided, then I can expect to pass.

+

I feel an acute sense of 'loss of face' when I see all the red writing on my returned assignment.

+   +

I experience stress just ahead of an exam.

> Memorisation is an essential route to understanding concepts.

Analysis

The written word has traditionally been esteemed very highly in Chinese society and leading on from observations earlier about the nature of authority, it was hardly surprising to find substantial emphasis being placed on the printed word. Copying the masters without acknowledgment does not carry the stigma of plagiarism.

However, what is shown in this analysis is an acceptance of unsourced work, but a strong rejection of other more humanistically based Confucian concepts (Figure 6). Also apparent is the level of English language proficiency as a powerful influence.

Those students seeking to discover a balanced order in their studies (Singapore especially) also exhibit a strongly humanistic orientation through their support of cooperative work, personalisation of materials, but at the same time their study approach is systematic and tightly controlled. In an apparent contradiction to 'surface' study methods, they also plunge into 'deep' learning by relating concepts across subject areas. This point will be taken up shortly.

Ever since the creation of an imperial examination system for entry into the Chinese civil service, there has been a heavy emphasis on memorisation and recall. In the process, the authority of the text was reinforced. It is, therefore, not surprising to find several core Confucianist values being underscored by the rote learning process (Figure 8). What *is* surprising is to find Australian students so heavily into memory work. They also polled in second place after Hong Kong in the popularity of cramming techniques.

Again Malaysian Chinese stood apart, being least involved with cramming techniques for exams, least worried by pre-exam stress, least prone to memorisation, generally least Confucianist of any Asian group and most individually motivated to study.

From a more detailed analysis than space allows here, it also seems apparent that both surface *and* deep learning processes are operating at one and the same time.

E.   The Way Forward

This brief exploration of just four areas of learning by Asian and Australian students has revealed some important differences in the ways in which students approach their studies. Predictably, the greatest divergence occurs, in almost all cases, between Australians and Asians. Also of significance are the differences show to exist amongst students who share the same Chinese cultural roots who might have been considered to be homogeneous.

From the evidence, Malaysian Chinese appear to be more accommodating, more 'Islamic', more individualistic and generally further removed from traditional Confucian values than either Singapore or Hong Kong, so that even though Malaysian Chinese voted strongest to honour their family, they were going to do this by their own efforts. Generally, Hong Kong students exhibit a closer connection with traditional values than their Singapore counterparts, particularly in regard to teaching methods, though not in all instances.

The practical objective of this research project is to provide a palatable guidance booklet for distance learners in Asia who will not be able to receive the benefits of on-campus attendance at a western-style university, but who, nevertheless, need to know what is expected of them.

This is *not* an exercise in taking away traditional values and replacing them with our own. This would be unthinkably arrogant and conceited. The booklet will be designed to *add on* another set of values to already existing approaches so that students can 'code switch' to western university mode when their studies demand.

The proposed booklet has an equally important second goal of informing and educating university staff dealing with distance mode Asian learners of the different value systems that their students may well be bringing to their studies. Hopefully, the cries of 'cheat' and 'plagiarism' will be replaced by a more empathetic relationship and a greater awareness on both sides of where staff and students, as fellow learners, are coming from.

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THE INSTRUCTIONAL DESIGNERS' GUIDE
TO INSTRUCTIONAL DESIGN

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Introduction

This paper is an attempt to share the author's recent experiences in completing the LLB (Hons) or law course at the University of London by external study. It is found that instructional design matters that seem to be complete for a particular course would still have to be rendered or rewritten by the student for the purpose of examination recall or personal study. In other words the diligent student needs to redesign the course material together with all other antecedent problem solving matters required in the examination to render themmemorizable and recallLable inthe examination. If we are to put the student first, then the design of these notes specific for committing them to memory (as required in examinations) is certainly a necessary step in the direction of learner approaches in open and distance learning.

Background

Course materials as designed by instructional designers have been well formulated from the perspective of instruction namely the best means and methods of imparting knowledge are used. Students' learning preferences, styles (Alsagoff 1985) and performance (Alsagoff, 1988) were studied in relation to instructional design. Instructional design also does take into consideration various theories of learning like the building of knowledge from the simple to the complex, from within the student's experiences to that outside his experiences, from facts to theory or vice versa and the like; using advanced organizers as originally propored by Ausubel and analysed by Baath (1979 pp.46-48), or Gagne's general teaching model (Gagne 1976, pp.21- 43) to name two proponents.

As such it would appear that the course material given to the student could be easily used for his personal study in the examination. However this is not true. Very often the good student would have to make his own short notes either in the course material itself or on other pieces of paper to serve as his guide for easy recall from his memory in the examinations. The structure or form of these student notes or guide is what the author proposed to call the student learning design as apposed to the course writer's or lecturer's instructional design.

Student's perspective - the design of learning

Good examination ready notes are notes that allow the student to look at them at a glance in a matter of a few seconds and recall almost all that has been noted. The easy memorization and recall of these notes so often required in examinations are directly related to the design or structure of the notes itself. The structure or form of notes that is proposed is the annotated charts.

From the author's experiences in studying law, it is found that the subject lends itself well to notes made in the form of charts. It ususally takes an entire day of between six to eight hours to make a good one page chart. Normally the entire topic is read and understood first. Then a rough chart is drawn to map out the main topic and how the main topic could be divided into sub-topics and the sub-topics into sub-sub-topics. Then using a double A4 paper (or large A2 size or 42 cm x 33 cm) and the rough chart as a guide, the detail notes for the main topic as in the introduction, sub-topic and sub-sub-topics will be filled in. For law, each topic, sub-topic or sub-sub-topic is usually explained by the main principle and the case laws supporting it; followed by other case laws that could have contradicted or varied the main case law. The judges' names, case names and important quotes from the cases are also incorporated. An entire topic or chapter may take anywhere from one to ten A4 sheets to complete. When a student does the notes or charts himself, he usually has a better grasp and deeper understanding of the topic and because he has read the entire topic and then written it in structural from he is better able to remember it especially if he spends a few more minutes reading and checking or highlighting the completed notes. In fact he has read it at least five times by the time he checks his notes; the first time is when he reads it overall before making the notes, the second time when he makes a rough chart, the third time is when he actually fills in the details using the rough outline chart as aguide, the fourth time is when he writes it and the fifth time is when he checks his notes before calling it completed.

Although this is a very commendable method of learning for the full-time hardworking student, it is very time consuming, so much so students who have become ardent users of charts have to share out the time consuming task of chart making with other ardent users. Good charts also do get around.

Besides law, subjects like the physical sciences, social sciences and the arts could be easily transformed into the above learning structure or design depending on the student's examination requirements.

The chart form of notes is more easily commited to memory. It can also be used to support and supplement problem-solving questions and answers. For example problems posed in a law paper

could be answered by introducing the main principle to the solution (probably found in the intruduction part of the chart); supported by the other principles (found in the sub-topic part of the chart); while quoting the cases and the judges' wise words if necessary. Then a deeper analysis of the problem may require the discussion of the particular sub-topic or even a sub-sub-topic in detail, namely a particular case law which forms the underlying principle or other case laws that appear to confound the main principle. Again the various case laws together with the accompanying judges' comments could be easily recalled from the chart notes.

Thus depending on the quality of the notes made in the charts and the students' ability to recall the notes, a good grade in the examination is not an impossibility. Hence a difficult subject when rendered some structure via the use of charts will lend itself easily understandable and recallable.

The instructional designers' additional guide to intructional design

Having expounded the virtues of the learning design used by law students in general, the author is not proposing that the present form of instructional design as unneccessary or redundant. On the contrary; as a student the author would very much like the present practice of instructional design with its step-by-step explicit presentation be kept more explicit, concise and better organised. In other words after the long and thorough intruduction of a topic for example, a concise sentence or sentences or even phrases should summarise all the introductory facts and preferably typed in bold typeface or highlighted in the course material itself. The same goes for the sub-topic and sub-sub topics. Any important personalities, quotes, cases or examples useful for examinations should also be printed in bold typeface or highlighted.

At the end of the topic or lesson a chart summary composed of the bold typefaces should be presented. Some empty spaces could be left in the chart for the student to fill in his own extra notes if he so desires.

In-text problems, questions or practices as are often presented throughout the course material should be retained for student practice and direct involvement purposes but at the end of the topic or lesson the course lecturer or writer should be able to present to the student questions of examination standard requiring quality answers. If the annotated charts have been well made and indirectly the course materials have been well written and organised (because the notes are taken from the course material) then, a good answer could be derived from the notes. A good indicator of good chart notes would be, any question on the topic could be well answered using the notes. If the answers using the notes are skimpy or shallow then the notes are skimpy and shallow and so are the course materials because they are derived from one another.

Good chart notes though concise are complete, thorough and cover all aspects, details and depths; not missing on important quotes, personalities, formulae or examples.

Conclusion

The value of a design for learning in the form of charts is not to be eclipsed by claims of completeness of the present form of instructional design as seen in most course materials. It is an important final part of instructional design that has been missed out and for the most part has to be done by the busy student himself who feels it is a necessity for his examination preparation. Simple subjects may not pose any problem to understand or to remember for the examination but complex ones certainly require the student to spend many hours charting his own learning. Hence the necessity of instructional designers to design this final learning tool for use by all students in the course, not leaving it to the few hardworking high achievers to chart their own way through.

Given the overall clarity of an annotated chart, students could also use this final chart notes as a guide before reading the topic; or while reading the course material to add in more notes of his own in the chart; and later reading for his own private study. In all, like making his own chart notes he would have read the material at least five times upon completion of the topic; the first time while he skims through the chart and the course material; the second time while he reads the entire course material; the third time when he enters or highlights the bold typeface phrases or sentences in the charts; the fourth time when he enters his own additional notes and the fifth time when he checks the notes once again. When he answers questions using the charts he would have to use them for the sixth time. After reading through the charts a few more times, the entire chart could be committed to memory more readily.

The advantages of the chart notes as a structure or design for learning are that they provide an overall picture at a quick glance, well structured, organised, concise, packed and everything in it; thus lending themselves easily to logical understanding for easy memorization and recall. During an examination our memory recalls not the printed course materials as a whole, or the recommended textbook but more likely the chart notes from beginning to end. The search for information is quick because the notes are thorough and all packed in a few chart pages. Additionally if the student has practised answering past examination questions using the chart design, the popular or frequently examinable areas to be recalled would have been practised and practice makes the recall much easier and more accurate.

Sceptics may claim that the making of chart notes by instuctional designers is tantamount to spoon-feeding the student for examinations; may result in stereotype examination answers and may not assist the student in his personal growth and understanding of the subject. On the contrary, because no two students would likely take the same route in the chart in answering a whole question, nor use the same words to answer a question, then no two answers can be the same or labelled stereotype. Furthermore if the student answers display excellent use of knowledge in the subject area then this means or design of learning is justified to achieve the desired end of excellent recall and use of knowledge.

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Is It Appropriate to Have Students Evaluate Final Examinations of Distance Education Courses?

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Distance education courses at the Open University of Israel (OUI) consist of several components, constructed by different staff members: course units (textbooks), assignments, tutorial meetings, tutoring by telephone, and final examinations. It is essential to have a significant links between each of the components and the others, and between the components and the final examination. Assessment of students' progress is needed both for students' feedback of their study and for determining their grades (Holmberg 1972).

Since the final examination is undoubtedly an important component of each distance education course, we consider it extremely important to have students' evaluation of their final examination.

During the last few years, the OUI's Department of Evaluation and Staff Development, has conducted survey at the end of each semester of students' attitudes towards course components. For both methodological and technical reasons the survey does not include students' evaluation of the final examination. The methodological reason is based on the hypothesis that evaluating the examination might influence the students' evaluation of other components. The technical reason is that in order to include the examination in the survey we would have to conduct the survey about six weeks later than we do now. This would delay the feedback of the survey to the decision makers.

The decision to conduct a special survey regarding this matter revealed some doubts (known to everyone who deals with evaluation, LeFrere 1981, Nevo 1983) by some of the staff members. They claimed that suitable procedures are carried out assuring that the examinations are valid and reliable, and that it is not appropriate to have students evaluate academic examination.

Finally, since at the OUI students are occasionally asked to evaluate text books, we believe it is both appropriate and useful to have them evaluate other academic material as well. We consider students' attitudes significant indicators of problems or difficulties (Holmberg 1989).

The purposes of the survey were:

1. To find out what students feel and think about the examinations, in other words, what is the rate of satisfaction of the examination. (Here we deal with the courses overall; results were analyzed separately for each course as well).

The criteria for students' evaluation were:

* Were the main issues of the course representative in the
final examination?
* Was the overall level of the examination too high or too
low ("level of difficulty")?
* Was the examination "fair"?
* Where the questions clearly formulated?
* Was the proportion of knowledge-questions
versus questions requiring application skills well balanced?
* Was the number of questions suitable?.

2. To ascertain what the students consider to be the beneficial effect of each one of the
course components to success in the examination.

A 25 item questionnaire which included multiple-choice as well as open-ended questions
was constructed. It was sent by the mail to 11,660 students of whom 2,769 (24%)
responded.

The results revealed that 67% of the students who responded were satisfied with the
examination (see Fig.). The three components considered most beneficial to success
were: reading the text units, fulfilling assignments, and individual preparation for the
examination. Unexpectedly, tutorial meetings were not evaluated as one of the three most
beneficial components.

Fig. Students' Evaluation of Final Examination
(percentage of the satisfied responses)
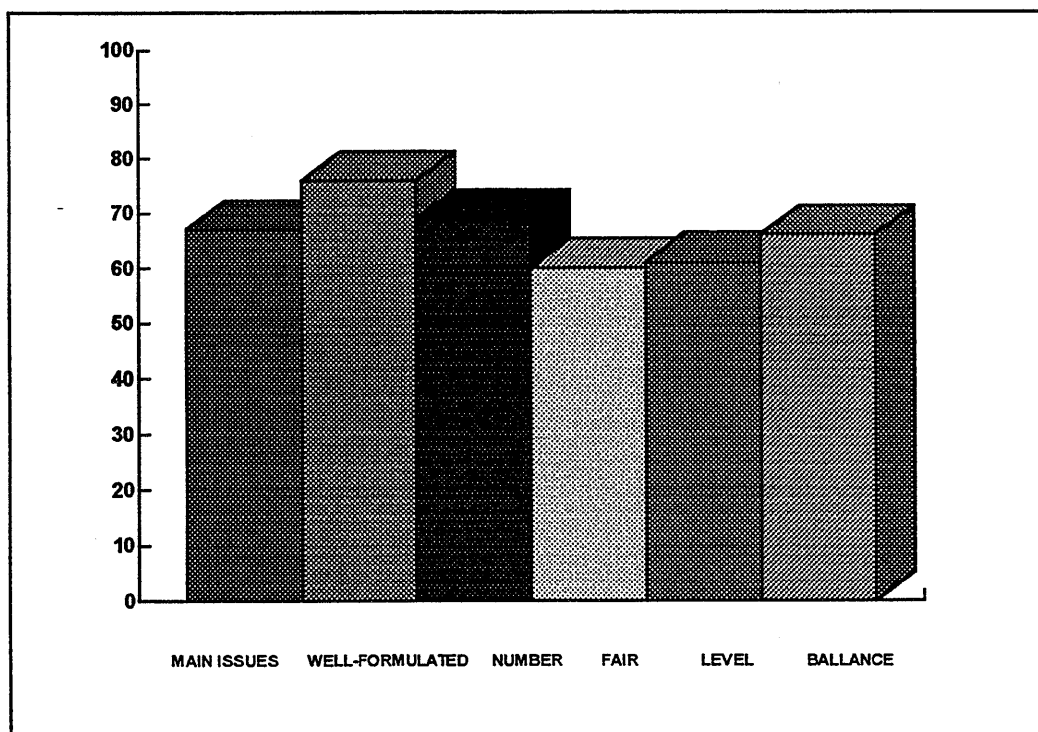
In order to find out if there is a correlation between the students' final course grades and their evaluations we asked those students who were willing to do so, to identify themselves by student number on the questionnaire. Sixty percent of them, 1689 students, did so. A statistical analysis indicated that their group is representative of the entire OUI students population. and they do represent the population of all the students.

Using Pearson Correlation Analysis we found that the course grade was correlated to three of the six criteria of examination evaluation: the examination was fair (.4), represented the main issues of the course (.29), and the questions were well-formulated (.28). Unexpectedly, the students' grade did not correlate to the evaluation of the level of the examination (-.13).

We found that students who were relatively new at OUI, students who attended less tutorial meetings, and younger students were more satisfied with the examination. Similar evidence about new students' evaluation of tutorial support was found by Morgan, 1994.

Our conclusion is that students' evaluations of final course examinations is an important part of course evaluation in distance education. Such evaluations can help pinpoint problems and can also be utilized by staff members in making choices between different versions of an examination.

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LEARNERS IN COMPUTER-SUPPORTED-COLLABORATIVE-LEARNING ENVIRONMENTS

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Keywords

Human Action Theory - Interactive Learning Environments - Collaborative Learning - Interface - Learner's actions and interactions - Actors - Meaningful and social learning.

Abstract

The aim of this paper is to discuss the advantages and disadvantages that CSCL environments offer to learners, based on an experimentation of softwares used by university students. We know that educational technology is a complex problem which needs simultaneous longitudinal (psychological, sociological, philosophical, economical, ergonomical, organizational, ...) and transversal (teacher, learner, trainer, instructor, physical surroundings...) analyses. However in this paper we have chosen as starting points the psychological and education dimensions. We are working with a constructivist approach to learning and within a theory of human action framework of the learning. Our long-term interest is focused on interfaces as decisive intermediaries in computer supported collaborative learning, inasmuch as they structure the types of communication processes that facilitate co-learning between two persons. We are interested in breakdowns to explore what they reveal about the learners and disadvantages they involve in CSCL environments. This research could also help identify the technological functionalities and the competencies required from the learners to efficiently learn in CSCL environments.

Introduction

In France, CSCL environments are just being developed and have not yet reached in a mature phase, we are really to begin to set up experimental telematics situations. Some engineer students school are familiarised with different collaborative softwares, but in the Human Science contexts there are very few universities that have the possibility of experimenting collaborative learning on local or internet network.
There is much discussion about which communicative tool is relevant for co-learning and tutoring : shared screen, conferencing systems, shared whiteboards or clipboards, shared text and graphic editors, and what kind of task to address : searching for information, co-operative problem-solving : e.g. organising the answer to an exam question, processing information, critical analysis of a text, transforming a text into a conceptual map, producing information, conceptualising, formulating hypothesis, applying information: transposing knowledge to a new situation, etc., in an educational environment.

In this sense we are particularly interested in determining the most appropriate way in collaborative learning, of using a work space and a communicative space such that the learning, can be seamlessly supported and coordinated.

More basically the learner's interest has to be maintained and stimulated throughout in order for the interactions to take place. He must feel in contact and be willing to communicate as often as needed with tools as transparent as possible.

Recontextualizing learning from a Human Action Theory

Human action theory (HAT) is an approach which provides theoretical tools for rethinking human cognition, its inherent complexity and its social and cultural dimensions, thus overriding many of the shortcomings of information processing theory. The theory is based on the human being as a social, intentional, motivated and situated "human actor" with a body and a personal history. In the study of computer supported collaborative learning, this means taking into account the characteristics proper to a situated, psychological, social incarnated actor in studying his specific learning activity. This approach is presented here in congruence with that of learning presented upper.

Human Action Theory is in accord with the growing awareness in the C.H.I. community of the need « to re-embody cognition in its social and cultural context (e.g. distributed cognition, socially situated cognition) (Rogers, Bannon&Button, 1993).

This vision of human beings as active agents, and not only as a set of system components or collections of cognitive attributes or processes, places emphasis on the person as an « autonomous agent » rather than a « passive element in a human-machine system », and on human activity as meaningful and accountable conduct.

From the question : How people learn? we have worked this approach that conceptualise learner as capable to transform the objects at the same time that he transforms him-self. In this perspective, cognitive objects and tasks only exist through production by a subject, oriented by intentions, motivations and signification for him of the task (Linard, 1993)

Such system should be governed, partly at least, by self-finalised actions that allow the system really to go « beyond information given « (Bruner, 1966) and aim at results of its own having a meaningful value for him. (Linard, 1993).

The shift to the human actor finds its most solid theoretical elaboration in the works of Vygotsky (1934) Leontiev (1978), along with the prominent action-centred constructivist theorists of intelligence that are Wallon and Piaget.

In this sense, every act is composed of three aspects or levels :

§ - Activity : is linked with « motive » and basic components are « actions ».(Leontiev, A. 1974-75).

§ - Action : has both intentional, an orientational aspect (what is to be done) and an instrumental aspect (how to do it) and especially modes by means of which it is realised : « operations ». (Leontiev,A.1974-75)

§ - Operation : Every operation is the result of a transformation of an action, resulting its inclusion in another action and its ensuing routinization. (Leontiev,A.1974-75)

In fact we think that the three levels proposed by a Vygotskian approach, is one of the possible perspectives to conceptualise the human cognitive activity as conducted through actions, which take place in a unity of time and space with specific intentions.
Human action theory as an approach that articulate the sociological, psychological and communicational dimensions of cognition, provides a natural organiser of experience and learning.

Learning through communication and work spaces?

Currently, computer communication tools are being developed that either support the separation of work and talk or the separation of private and shared spaces. Our research question is interesting in observing and comparing the efficacy and acceptability of interfaces that separates shared and private work spaces and those that separate communication and work spaces. In this way, in a tele-learning collaborative task the work space (goal space) is different from the device space (user's mental model of the system) and the communication space that must also be represented in some way at the interface level.
One of the hypothesis that guide our software analyse is the important role of social processes in learning activities. Not only interactions between teacher and learner are significant but also interaction between peers seems to be an spontaneous support to accomplish a tele-learning task.
The emergence of Computer Supported Cooperative Learning has brought to the forefront renewed interest in how people learn in groups and in the functionalities and design issues of technology to support group learning.
Three major focuses in TSCL (telecommunications Supported Collaborative Learning) research identified by Collis (1993) are social dimensions : studying group work processes (what is collaborative learning ?) and studying group communication processes and the third is technical : studying the functionalities of technological supports. How do we design tools that support cognitive, social, and managerial processes, separately or in an integrated fashion ?(Hereen and Collis, 1993)

Learner's interactions in CSCL environments

From a learner-centred and interaction points of view, learning activity is not a computation or manipulation of representations, learning is a constructing meaning from information because of a human capacity to make sense and to share meanings with someone.
We analyse real life learning situations and identify learning as a dynamic, multidimensional activity of intentional, motivated and self-organising actors rather than as «acquisition and modification of cognitive states and structures determined by an ordered set of functionalities and rational processes finalised by the causal necessities of a predifined task» (Linard,M. 1993)

In contrast with the objectivist cognitive conception of cognition which states that knowing is a matter of logical information processing, we hold the view that knowing is an existential process in which information is integrated or captured through a biologically and socially founded experience. (Bruner,1982; Piaget,1977 ; Leontiev,1974 ; Lakoff and Johnson, 1980 ; Varela,1989,1993 ; Vygotsky, 1934)
In this way, human learning is an intentional, motivated activity specifically aimed at transforming outer objective information into inner meaningful knowledge, both personally and socially. (Linard, Zeiliger, 1995)

Thus, meaningful learning (Ausubel, 1963; Bruner, 1960) is apt to occur when students actively participate in the construction of their own knowledge through interaction with learning materials and their peers. The learner achieves this active processing of new information: by establishing links between new information and knowledge already present within his cognitive structures, thus developing his own knowledge. We are quite far to think « learning » or « interaction » as an exchange of pedagogical contents or « chunks » or packages of information. We put the focus on pedagogical relation included peer's relation both of them understood like a co-construction frame to support this singular and meaningful experience that is «learning».

This cognitive psychology approach to the learning process places a primacy on studying and facilitating interactions students have with each other and with materials in their environment. Thus, collaborative learning can be more fostered as conducive to meaningful learning.

Many advantages have been identified in different research and can be observed when learners interact in a CSCL environments.

One of the claimed benefits of many educational technologies is that they facilitates more sophisticated forms of learning such as critical thinking or problem-solving. For example, tele-tutoring systems allow students to receive more detailed feedback and guidance in their learning progress. (Kearsley,G.1993)

Bransford et al.(1990) believe that hypermedia is a useful vehicle for anchored (context-dependent) instruction. Richartz and Rudebusch(1990) propose that hypermedia facilitates collaboration during learning. Hirth (1993) argues that distance learning technology can not only enhance your outreach to students in remote locations but also improve teaching and increase student awareness of technological advances.

These advantages can be observed with students who have specific competencies that these new learning environments enhance or develop in learners. For example,

- Student accountability is promoted
- Students may ameliorate their communication and social skills for organising, summarising, elaborating, explaining and defending their ideas, knowledge, philosophical positions...
- Developing the capacity of explicit thinking « underlying». Chat box give to the students the possibility to clarify, to ask or to comment without the formality applied in a face-to-face conference.
- Learners may be inspirited by the ideas, contents, insights of peers
- Stimulation to do, write, better
- Engagements, ideas, personal opinions may be visualised
- Time is not wasted.
- Decision, choice , initiative have an important place because each word has a physical presence , « all you write is taking into account by the other »,
- Collaborative learning is an interactive and mutually reinforcing process of personal and social construction of knowledge (Hereen and Collis 1993)
- Autonomy
- Capacity to create strategies
- To see collaborative problem solving and learning as involving the construction of a negotiated and shared conceptual space, via the external mediation framework of shared language, situations and activity ». (O'Malley, 1992)
- Many form of open learning improves the learner's control over their learning, allowing them to decide when to learn, how much at a time, at what pace. This much does not require technology. But technology can provide instant feedback on practise and vice-versa as often as necessary, and can provide experience of the ideas through controlled simulation. »(Laurillard,D.Comp'Act 20-21.3.95).

In turns out that collaborative teaching is most helpful in fact for students who have the self-confidence in acting and interacting without fearing to be mistaken or neglected.

Disadvantages take over with learners that have special need of approval, stimulant relationships and encouragement that technological environments explicit quicker than traditional ones.
We have identified characteristics concerning «neglected students»

- The students who are shy, who stress or improve negative emotions such as sorrow, anger, insecurity in front of challenges, new tasks,
- The students who feel that call a tutor is intimidating,
- They do not have rich and fluent communication with the tutor or with their peers,
- They cannot identify their goals or set them in an hierarchical order,
- They show insecurity, a poor self esteem, a lack of convictions of ideas,
- Students being afraid of taking initiatives.
- Students who need personal, oral and visual instruction to do something,
- Who need affective and familiar encouragement,

Broadly speaking these observations show us that psychological dimensions («personality's characteristics») play an essential role in technologically mediated learning.

Conclusion

HAT shows us that cognition is a mental and a body action at the same time. Cognition is also to planify goals and achieve them in a organisational perspective built by a social and human actor. HAT gives us a tool-box to organise learning as a human effort that it is possible to do it if we have the capacity to create and achieve a life's project and the possibility to share it with someone.
Concerning collaborative learning we cannot define it only, like «extending instruction to off-site areas using communication technologies» CSCL implicates other factors related to human mediation through technology.
What is at stake in learning is not only intelligence and knowledge construction but more basically self-identity and relating interaction with other people.
CSCL environments must provide for both dimensions if they are to have any significant integration in mass-education.
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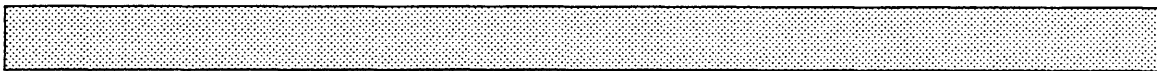
**AN INTRODUCTION TO BRIDGING-EDUCATION
AT THE TECHNIKON ORANGE FREE STATE**

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AN INTRODUCTION TO BRIDGING-EDUCATION[1] AT THE TECHNIKON ORANGE FREE STATE

ABSTRACT

Various South African post secondary education (PSE) institutions are attempting, by way of bridging programmes, to improve the quality of higher education from that of a mixed Third World country, eventually to a First World country. As such, it addresses one of the most noted problems of Africa, namely the shortage of classrooms, equipment, teachers and the low standard of academic books.

Politics has, specifically in South Africa, bedevilled the school system and the quality of PSE. This is the reason why real negotiations on the education system are still struggeling to get on the track to a new dispensation.

There is also a shortage of discipline and no proper learning culture. The premise that education qualifications are something a person can only obtain through dedicated study and not something that is handed out to the victims of apartheid, is disregarded by the egality theory of affirmative action slogans.

While practical education problems cannot be separated from political problems, the Technikon OFS and University OFS in South Africa, have taken the initiative with an unique bridging programme to academically acculturise prospective multicultural students.

Subsequent to some practical aspects of a typical strategic management approach the Technikon Orange Free State (TOFS) embarked on an unique self-evaluation model in co-operation with .multicultural community leaders to assist deprived students who want to enrol, but who do not meet admission requirements. This programme which lasts three years to bridge the transitional period into a new South African constitutional dispensation, is known as the Carreer and Preparation Programme (CPP).

Research started in 1988 to evaluate possible Academic Support Programmes (ASP), as well as various bridging and channelling models in South Africa and abroad.

1   Assistance education to prospective multicultural students from secondary schools to tertiary education (universities, technikons and technical and vocational colleges).

Faculty and academic leaders were internally and externally consulted in constructing the CPP. The approval of the authentic multi-cultural leaders of the community provided the necessary legitimacy to the programme.

In 1990 the CPP commenced in close co-operation with the University of the Orange Free State (UOFS) and Technical Colleges to help high-risk multicultural school leavers. Lecturer and tutor assistance, as well as remedial help is offered to multicultural students in a multi-cultural bridging program on a continuous basis. The academic growth of the students is monitored with regard to learning methods and approaches, organization, time management, learning difficulties and adjustment problems. The student counselling service of TOFS and UOFS focused on the growth and development of the multicultural students. The idea is to help students to become independent and to establish their own identity.

As such, it could soon become an internationally accepted higher education model that will hopefully contribute towards the necessary *de jure* legitimacy of the CPP and for future accreditation in the region.

THE MISSION OF THE BRIDGING PROGRAMME

The necessity to uplift the multicultural students academically is realized, but it is equally important not to degrade higher education. The maintenance of First World academic standards is therefore still important. Therefore, diverse bridging plans are unavoidable.

Bridging implies that a gap does exist. This gap can be widened by academic erosion and for that reason it is preferable to avert it, says C.T. Verwey of the Human Sciences Research Council. (Information Service of the Bureau for Academic Support (BAS)).

In the meantime the CPP does not want to waste any more time waiting for the previous school system to be transformed in a new political dispensation, so that more multicultural students can already be enrolled. Hereby is the philosophical point of departure that study at PSE-institutions must be available to any person that can benefit from it. Nevertheless, the same international practice of relatively open to relatively closed with regard to a specific socio-political and socio-economic environment that serves a PSE-institution remains, according to the Committee of University Principals. (CUP 1987).

Various factors, like the democratisation of higher education, demands to Africanize Technikons, all other socio-political changes, and financial constraints, have also forced PSE-institutions in South Africa to re-evaluate academic standards.

If this does not occur, bridging and remedial or corrective actions could endanger the traditional mission of the technikon. The TOFS is therefore highly scientific in its approach, so that academic standards will not be unnecessarilly underminded. At the same time the TOFS accepts the challenge of accommodating growing numbers of high-risk students in the post-apartheid decade.

On the whole the number of school-learners that qualify for higher education increases annually. This fact can be deduced from the following table:

TABLE 1

CURRENT AND PROJECTED NUMBERS

Expected number of matriculants in South Africa

(i)	Pass without matric exemption and qualify for a technikon and technical college	1990	2010
	Whites	28 186	21 374
	Coloureds	8 620	17 420
	Asians	5 477	5 793
	Blacks	30 808	123 930

(ii)	Pass with matric exemption for university admittance	1990	2010
	Whites	28 481	24 950
	Coloureds	4 988	12 762
	Asians	3 831	6 084
	Blacks	23 463	75 886

INTERNATIONAL EXAMPLES

Problems with the transition from secondary to PSE is a world wide phenomenon and therefore, the dilemma of multicultural students in South Africa is not so unusual.

Even the United States of America has, for a considerable time, had academic help-programmes to prepare high-risk students for the demands of higher education, writes LM Tomlinson of the George Wahington University in Washington D.C. (1989)

* These institutions are known as "Community Colleges" in the USA. Here transitional students can complete a comparable degree in addition to their final degree at university.

* In Britain courses are prevented to adult students ("adult education") who are not yet ready for direct university admission, as an alternative to conventional qualifications (Council for National Academic Awards, London).

* In France, a project is presented at the Univirsity of Grenoble (1982- 1988) to give students the opportunity to optimise higher education. Satisfactory results have reduced the failure rate. (Information Service, BAS)

According to P de V Booysen (1991), the uniqueness of the situation in South Africa is the enormous disparity in the provision of teaching in schools to the different races: in quantitative and in qualitative terms.

TOFS and UOFS are Afrikaans PSE-institutions that must accommodate the South Sotho- and Tswana-speaking masses through English. Although Afrikaans will still remain the medium of instruction for white Afrikaans students, it is forseen that English will become the dominant medium of instruction as a result of the growing number of multicultural students.

The advantage of africanization for the TOFS and UOFS is the prevention of academic and social isolation. Continental acceptance will also mean greater international acknowledgement.

3. SCHOOLS OF THOUGHT

Two schools of thought exists in South Africa on this matter. One group believes that South Africa is a Third World country and First World standards can therefore not be maintained. This mean that equal rights cannot be enjoyed by a significant number of people. The other group believes that requirements for admission must be stricter so that only a select group can be assured of quality higher education.

SJP du Plessis (1992: 17), one of the numerous writers on this matter, is of the opinion that PSE-institutions are typical First World components in a Third World majority.

As a result of changes in the situation, the TOFS and UOFS is attempting to aid the Third World community to adapt, or quickly and scientifically as possible, to First World institutions.

The underlying principle, however, is that faculties and their departments must adjust their courses as a whole, instead of clinging to inherited European models.

THE CARREER AND PREPARATION PROGRAMME (CPP)

The UOFS and TOFS (which trains technicians and tradesmen) because of the lack of community colleges in the Republic of South Africa (RSA), forged an agreement with the Technical and vocacational colleges in this region (Bloemfontein), to help multicultural high-risk matriculants.

This means that the multicultural technical and vocational colleges will, in essence, perform more or less the same role as the community colleges in the United States of America. As such, it is an internationally accepted higher education model that will lend legitimacy to the CPP.

High-risk students who have passed matric, can complete an existing National Technical Certificate (N4) at the technical colleges during the first half of the academic year. Four possibilities exist for the second half of the year according to the student's needs and progress.

Certain National Technical Certificates (N3) with matric subjects/courses can be followed if the student does not progress according to prescribed requirements. The orientation programme with personal learning development opportunities will be prevented in conjuction with this programme.
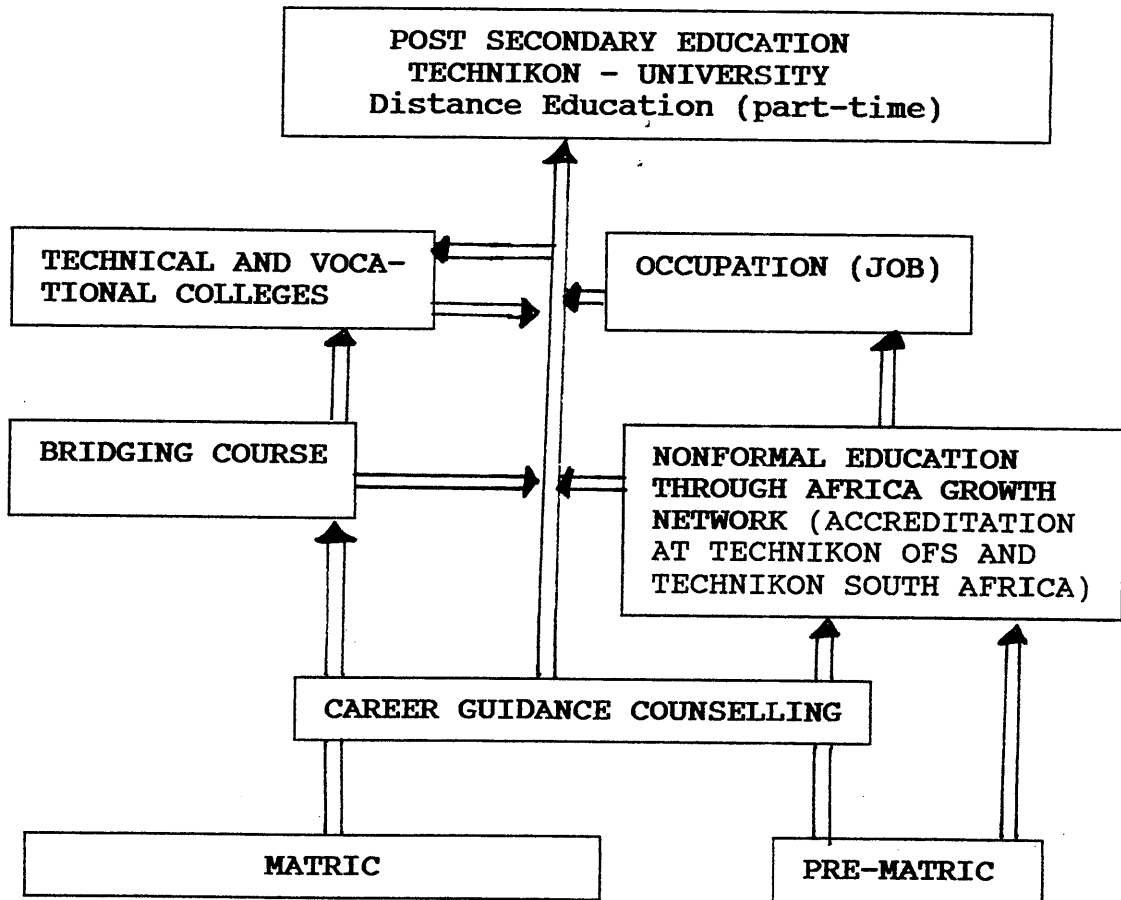
The student can choose one of the following courses for further study if his/her progress is up to standard.

* N5 or N6
* Further study for technikon credits
* Furher study for university credits
* Further study at different vocational colleges is also being considered as an option.

For example, the following figure illustrates one of the open learning concepts at one of the TOFS branches in Kimberley:

FIGURE 1

NORTHERN CAPE OPEN LEARNING PROGRAMME [NOLP]

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┌─────────────────────────────────────┐
│     POST SECONDARY EDUCATION         │
│      TECHNIKON - UNIVERSITY          │
│    Distance Education (part-time)    │
└─────────────────────────────────────┘

┌───────────────────────┐        ┌─────────────────────┐
│ TECHNICAL AND VOCA-    │◄───    │  OCCUPATION (JOB)   │
│ TIONAL COLLEGES        │───►    │                     │
└───────────────────────┘        └─────────────────────┘

┌───────────────────────┐        ┌───────────────────────────┐
│                        │───►    │ NONFORMAL EDUCATION       │
│   BRIDGING COURSE      │    ◄── │ THROUGH AFRICA GROWTH     │
│                        │        │ NETWORK (ACCREDITATION    │
└───────────────────────┘        │ AT TECHNIKON OFS AND      │
                                  │ TECHNIKON SOUTH AFRICA)   │
                                  └───────────────────────────┘

┌─────────────────────────────────────────────┐
│      CAREER GUIDANCE COUNSELLING             │
└─────────────────────────────────────────────┘

┌───────────────────────────┐    ┌─────────────────────┐
│         MATRIC            │    │     PRE-MATRIC      │
└───────────────────────────┘    └─────────────────────┘
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GUARDIAN-TUTOR HELP

Remedial help is now offered to multicultural students in a multi-cultural bridging programme by using guardians (lecturers) and tutors (student assistants) on a continuous basis. The academic growth of the student is monitored with regard to learning methods and approaches, organization, utilisation of time, learning difficulties, and adjustment problems.

The Student Counselling Services of TOFS and UOFS are, with regard to problems of adjustment, focussed on the growth and development of the multicultural students during their PSE years. This includes helping the student to become independent and to establish their own identity.

There are, however, many adjustment problems and obstructions in the period of transition from the old apartheid order to a new democratic dispensation in South Africa. Of these, the poverty-shock is probably the worst.

Although the Bureau of Development at the TOFS is trying to enlist bursaries for multicultural students, a large financial need also exists to adapt the existing infrastructure to the bridging programme.

Expenditure on guardians, tutors, translations and formulation of new text books involves enormous outlays.

Therefore, interested persons in the Republic of South Africa and abroad are invited to support, financially or otherwise, multicultural students who wish to be associated with the culture of learning at the TOFS. In this sense, it is truly money for peaceful development within the Reconstruction and Development Programme for a new South Africa.

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Introductory remarks for a discussion group:

SHOULD ACADEMIC COUNSELLING AT A DISTANCE TEACHING UNIVERSITY BE OBLIGATORY?

Yael Enoch and Ruth Arav

The Open University of Israel

The many open universities that operate around the world vary to a large extent in their degree of 'openness': Are previous academic qualifications required? Do potential students have to pass an admissions test? Is the number of students admitted per year or per semester limited? Can the student freely design his/her study programme or can s/he choose only among a few pre-designed programmes? It would be reasonable to assume that the more "open" a particular university is, the harder it is for the students to find their way between all the possibilities. The question is whether help, or as we call it, academic counselling, should be offered or made obligatory?

The Open University of Israel practices an entirely open admissions policy. Any person who wishes to enroll in one of its approximately 200 introductory and intermediate level courses can do so. An additional 100 advanced level courses are open to any student who has taken the required prerequisite courses. The University publishes a yearbook which contains a brief description of each course, including the number of credit points which it grants, as well as the courses which are needed (either as prerequisites or as recommended knowledge) in order to study it.

The yearbook also specifies the exact requirements (number of creditpoints, types and level of courses etc.) for each of the degrees that the University offers. Thus, a student could, at least hypothetically, design his/her own study programme, register by mail and visit the University center in Tel-Aviv for the first time at the graduation ceremony

In addition to the yearbook the University publishes for each semester a booklet which contains practical information concerning registration procedures, course fees, deadlines etc. as well as a list of academic counsellors, their addresses, phone numbers and office hours. The counsellors are situated in the OUI centers in Tel-Aviv and Jerusalem as well as in study centers in every part of the country. The students are free to avail themselves of the services of an academic counsellor of their choice, who can help them to choose a single course or design an entire degree programme etc. In reality only a small proportion of the students take advantage of this service.

Before going any further in our discussion it is necessary to give at least a brief account of a typical counselling session at OUI:

The student who comes for counselling to the central campus, in Tel-Aviv or Jerusalem, usually meets a senior academic counsellor who concentrates on students who are interested in his/her academic discipline. By making an appointment with a particular counsellor the student indicates that s/he has already chosen a particular academic discipline (e.g. sociology) or at least a certain academic field (social sciences). The student usually asks for help in designing an entire study programme, which takes into account the academic requirements for a degree in the particular area or discipline, as well as the students inclinations and interests.

The counsellors have no objective tools which can help them to assess the students' ability to meet the requirements of university studies in general and of the particular discipline s/he has chosen, apart from a general impression based on the information provided by the student.

At the end of the counselling session the student will have received either a complete study programme, a list of courses still needed to complete a degree or a list of courses for the first year. However, the university has no means of knowing whether the student follows the advice of the counsellor or ignores it and registers for an entirely different course, or takes the right courses in a wrong sequence.

In a typical semester, autumn 1994, 17,685 students were registered for one or more courses, among them 10,901 studied in pre-organized groups, including regional and municipal colleges and 6784 were individually registered students. Of all the registered students 6470 were new students, 4444 of them studied in pre-organized groups and the remaining 2026 were individually registered students.

All the students who participate in a pre-organized group study according to a study programme designed by their regional counsellor who in turn seeks the advice of a senior academic councellor at the OUI. This leaves us with nearly seven thousand individual students who do not receive any academic counselling, unless they themselves initiate it, and in our experience only a small proportion (around 20%) do so. Those students who do not seek help from a counsellor are, in our opinion, a 'high risk' group who might make serious mistakes in their choice of courses or degree programmes and as a result become frustrated even to the point of dropping out of the system.

Over the years the rate of drop-out among OUI students has been around 30% for students in pre-organized groups and around 60% among individually registered students. Although a wrong choice of course or study programme is obviously not the only reason for dropping out of the university, these figures could probably be substantially reduced if instead of the existing optional academic counselling service, obligatory counselling were introduced. On the other hand one could think of many arguments in favour of retaining the status quo, that is: leaving academic counselling as an optional service which only a small proportion of the OUI students utilize.

The most important of these arguments is what we call "The spirit of the OUI", i.e. the belief that a complete freedom of choice should be granted the students. Thus a student is free to design a general study programme that includes courses from a large number of disciplines. E.g. a combination of courses in history, literature, education and social sciences plus three or four science courses would make a perfectly legitimate, though maybe not so wise, degree programme. Furthermore, a student can register for the equivalent of a second year course before taking the recommended 'first year' courses. On the other hand students might have quite logical reasons for their choice of degree programme or sequence of courses. After all, many of our students are mature adults who have chosen to study at the Open University exactly because of this freedom. Another argument against obligatory counselling is the high cost for the organization of such a scheme. Making councelling obligatory will require the recruitment and training of a large number of additional counsellors, at a great expense. Besides, a majority of the senior academic staff think that the only really qualified academic counsellors are the senior academics of the University who are or were involved in writing, developing and teaching the courses and therefore have a type of intimate knowledge of the courses in their academic field, which nobody else can acquire. But it is quite clear that the 32

members of the senior academic staff could not possibly cope with counselling around seven thousand new students each semester, let alone keep track of the progress of advanced students.

The situation as described here leaves a number of questions open:

1. Assuming that academic counselling is helpful for most students, should it be obligatory?
2. If counselling will be obligatory, at what stage in the course of studies should it take place: before starting the first course, after the first course or after 3-4 courses, i.e. after the equivalent of one year's studies?
3. Is one counselling session sufficient or should two or even three sessions be required?
4. If counselling will be obligatory, does this mean that some kind of follow-up should also be obligatory, in order to ensure that recommandations are followed? and if so - how?
5. If counselling remains optional, would it be helpful for the students to have access to a computerized counselling service, even in the form of a diskette which they can run on their own PC.?

These questions have given rise to serious discussions among the senior academic staff of the OUI - but no conclusion has been reached yet. In this discussion group we would like to take advantage of your experience as distance educators in different educational frameworks. We hope that a practicable solution will emerge from this debate.

Teaching and Learning Tensions in a Mixed Mode University

Dr Stephen Fallows and Professor Kate Robinson

University of Luton

Introduction

Throughout the world, the predominant approach in mainstream higher education has revolved around the lecture with associated seminars and tutorials. This approach is campus-focused with students required to be present at specific locations at times which are predetermined by either the institution or tutor. Direct, face-to-face contact between tutor and student is central to this approach although the extent of this contact will vary from the individual or small group in a tutorial through to the large group in a key lecture.

In this conventional model, the teaching and learning methods are well established and are largely lecturer focused as the tutor personally, and directly, develops and delivers the curriculum.

In the United Kingdom the only significant higher education exception to the campus-based model is the Open University which delivers its curriculum via distance teaching methods using predominantly printed resources and radio or television broadcasts. The Open University (and other distance teaching institutions) may be described as, primarily, a facilitator of adult learning. The Open University student base is mature and in many instances the Open University student is seeking to gain an additional higher education qualification. The Open University does not seek to cater for the younger student who transfers to higher education directly from school or further education college.

The distance learning university, of which the Open University is a prime example, offers a resource-based learning experience which relies on a high degree of student drive, motivation and personal study skills. The learning process is structured by the resources used and timetabled by a system of assignments which must be completed regularly. To ensure success, a good deal of institutional effort must be devoted to the establishment and maintenance of quality control throughout the development and production phases for each of the learning resources to be offered. This quality control process includes not only the academic issues of curriculum content but also deals with those issues which are concerned with the technical and aesthetic aspects of learning resource production. The costs associated with the production of top quality educational resources are tremendous and can only be sustained through their use with a large number of students over a number of years. The distance teaching university is able to invest in the production of its teaching resources since in may avoid many of the usual infrastructure costs associated with a conventional campus-based university.

In some institutions around the world the distance learning university and conventional university come together in a "dual mode" which tends to provide the two educational

approaches within separate operations. The on-campus students are taught in the conventional manner whilst separate programmes using distance learning procedures are utilised for off-campus students. Often in such situations the potential for synergy between the two modes is lost as separate teams develop and deliver the curriculum.

The "mixed mode" university represents a fourth alternative approach and is characterised by the use of materials and methods developed for distance (off-campus) students with otherwise educationally conventional, mainstream (on-campus), students. The "mixed mode" approach is being adopted by an increasing number of institutions which are being forced to re-evaluate their priorities (usually for externally imposed financial rather than purely educational reasons). The majority of those adopting a mixed mode strategy are former dual mode universities which see benefit in consolidating the effort put into distance activities into the broader institution. This will often involve the breaking-down of the barriers which may exist between those responsible for the distance provision and those whose interests have been solely campus-based.

An alternative "mixed mode" approach applies in a number of otherwise conventional universities which are adopting a strategy of incorporating materials produced elsewhere (for distance learning) into on-campus programmes. This paper focuses on the teaching and learning tensions which derive from such an approach. The paper cannot provide a compendium of solutions since these are still in the making; it will however seek to raise a number of issues which will be faced by institutions adopting this route. Although it is not yet possible to offer the instant panacea it is hoped that the issues raised within one institution which has adopted this strategy will be a useful contribution to the debate on this matter.

Managerial Justifications
In the 1980s the (then) Luton College of Higher Education adopted the "dual-mode" route to open learning as a small, but dedicated, central unit sought to develop and offer a range of courses in a range of disciplines. This centralised approach was minimally resourced and, being separated from the mainstream academic provision, did not build a feeling of ownership and personal empowerment amongst the mass of teaching staff. It is not surprising, therefore, that the unit did not have a significant impact on teaching and learning within the institution. This experimental, production-focused, initiative was lost as the College expanded rapidly and the priority in both management and teaching was focused on the development of new courses. Open learning was largely marginalised, although a token presence was maintained with respect to certain professional courses particularly within the Faculty of Management.

By the early 1990s, the College was in a transition phase, moving progressively towards university status. Teaching and learning strategies were being re-evaluated against the emerging University's plans and requirements for the future. Open learning (OL) re-emerged as a serious option for several reasons:

- OL was judged to be a means of maximising the benefits of (the relatively low compared to sectoral norms) academic staff resources. This is especially true in areas where staff shortage exists.

- OL could be used to allow students to gain access to national and international experts. As above this was judged to be particularly important during the period in which the new university raised the academic profile its own staff through a combination of recruitment and staff development.

- OL can be used to shift the principal location of study from the university's premises to those of the student. This was judged to yield valuable space benefits for the university. This saving relates principally to the (relatively expensive to construct) lecture theatre space although there may be an increased need for the (relatively cheaper) tutorial room.

- For certain categories of students, the option to utilise OL, for at least part of their studies, can increase the practicality of participation. For example, this is true for those students whose family circumstances impose heavy demands or for disabled students for whom the option to undertake a portion of their studies at a time, place and pace to suit their personal requirements can release physical energies which can be concentrated on the remaining campus-based activities to maximum effect. This factor is particularly important in an institution which prides itself on its commitment to the broadening of access to higher education.

- OL is a method increasingly utilised by employers in the training of their staff. The use of OL within the university curriculum allows students to gain experience (and hopefully, competence) in this methodology.

- The University's portfolio of courses includes a number which are focused on practitioners (for instance health professionals) who may have difficulty in attending a conventional "nine to five" course.

- OL, in addition, could be used to extend the effective geographical "catchment area" of the course, department and hence university. Since a significant proportion of the university's students normally reside with the accepted "travel to work" area, an opportunity to extent this catchment is to be welcomed.

All of the above justifications are principally concerned with the maximisation of benefits derived from the investment of resources (people, premises, student and staff time). Whilst these "managerial" justifications are clearly of major importance, it should be noted that there is an institutional recognition that open learning offers an additional and powerful teaching and learning methodology.

Open Learning Methodology
The methodology of open learning requires that interactive learning materials (delivered as print or electronic media) represent the students' principal teaching and learning resource rather than the lecturer providing this function. The students' learning thus becomes an independent activity rather than a class activity. This is a significantly different pedagogic approach to that found within the conventional course.

Traditional resources (such as class handouts or television programmes) complement and support the activities of the lecturer. With open learning the lecturer supports the students' use of the open learning materials and complements the learning process (through tutorials and other activities) rather than delivering the curriculum directly.

In most instances, open learning cannot be considered as a cheap option since considerable resources must be devoted to the development and subsequent production of the learning materials. In-house production can rarely be justified except for the largest groups and it is only those institutions with long-term commitment to this methodology which are able to invest substantially. The significant exception to this rule applies where external (additional) funding is provided (such as for example the UK's government-funded Teaching and Learning Technologies Programme which is supporting the production of a wide range of technology based open learning materials).

A Mixed-Mode University

The University of Luton has taken the decision to become a mixed mode university with open learning materials being used as major and essential elements within the overall curriculum. Open learning is interspersed within and beside conventional teaching to provide a diversified learning experience.

In its adoption of the mixed mode model the University rejected (at least for the short to medium term) in-house production as the primary strategy. The University utilises a variety of open learning materials purchased "off the shelf" from other institutions. The most important supplier is the UK Open University although materials have been acquired from institutions as far away as Australia.

Although purchased "off the shelf" the materials are always subject to the University's standard course approval and validation procedures. Furthermore, the University provides a greater degree of student support than would be the case if the same materials were to be used in the distance learning mode. Since the open learning materials are supported by the University's tutorials there is opportunity to provide additional materials (for instance newer or local examples). Similarly, the assessment activities undertaken by the student are locally developed to take account of the University's own priorities, procedures and practice.

A target of 10% of overall course provision by open learning was set for the academic year 1993-94 with 20% the goal for 1994-95. In order to achieve this level of commitment, each academic area has been required to examine its course delivery methodologies and to consider whether appropriate open learning materials were available and suitable for inclusion. Responsibility for implementation of the mixed mode strategy was devolved to course teams rather than to a central and separate department. A cross-University working group (chaired by one of the authors) undertakes monitoring and provides advice and encouragement.

Teaching and Learning Tensions - Actual and Potential

The adoption of a mixed mode approach (particularly in those institutions following a puchase rather than production strategy) has highlighted a number of issues which are worthy of wider debate and consideration. The issues range from the administrative to the pedagogic and the following paragraphs outline a number which relate specifically to teaching and learning.

- Open learning is perhaps best suited to mature learners who have already developed their study skills and have a personal motivation to learn and (hopefully) a commitment to their subject. The Open University student fits this model exactly since, for many, study is undertaken for personal interest and pleasure as much as for career advancement. Unfortunately, many of today's young undergraduates do not have advanced study skills and their motivation for participation in higher education is driven by necessity (poor job prospects) rather than by love of their subject.

- It follows from the first point (above) that open learning is most suited to the needs of students approaching the end, rather than near to the beginning, of their studies. However, final year courses are tightly focused and often build directly on the research interests of the academic staff. furthermore they are commonly taken by relatively few students thus making the availability of open learning materials unlikely.

- If students who are more mature and with better study skills are likely to fare better with open learning than their younger colleagues are there other categories of student for whom a shift to the use of open learning will bring benefits or difficulties? Does the type of prior education make a difference? Do the students who arrive directly from the closeted confines of the sixth form cope as well or less well than those whose route to higher education has included a period in a further education college? These questions are currently the subject matter of on-going research activity.

- Open learning requires that students take responsibility for their learning and timetable their own learning. Does success in open learning equate with a strong sense of time-management?

- Open learning requires additional support. This support is needed both in respect of the subject matter of the learning materials and the process of learning (a generic transferable skill). This leads to questions of who should provide the skills elements - should it be built into each course module and be provided by the subject specialist or should it be bolted onto the provision and supported centrally? This question has clear budget implications as additional support staff are required for the bolt-on model whilst the built-in model requires subject specialists to provide learning advice - a task for which they may not be best suited.

- Open learning is a generic term used to describe a wide range of approaches and techniques. Do different types of students cope with different open learning styles in different ways? The work-book based open learning materials (for example) require the ability to absorb information and ideas from the printed word and will suit the more literate individuals. Computer based materials may be less well accepted by those whose prior exposure to this technology is minimal.

- In addition to the methodological questions it is also important to consider the utility of OL for different disciplines. Some subjects are clearly more "factual" than others whilst others rely to a substantial extent on discussion and debate about ideas and opinions. Whilst OL can be applied to each type of subject there will be different learning objectives for the OL element of the course.

- From the lecturers' perspective, the use of open learning as described, can either:

  be seen as a threat through the imposition of another's ideas and curriculum on what is largely the private world of the higher education lecturer
  or
  be seen as an opportunity to concentrate on the student support easpects of the curriculum with a chance to develop the students through discussion and debate in tutorial

  Each of the above views can be found at the University of Luton and there remains a significant staff development exercise to be completed in order to maximise the effectiveness of staff in the use of this new methodology.

Concluding comments

The questions and points raised above are not easily answered and there may not even be a definitive answer to every one. Each answer will in turn raise further points for debate. The debates will be focused at a number of levels which inevitably interlock.

Student Centred Issues. Are students equiped to be autonomous learners? Whose responsibility is it to make them so? Are different types of student more able to cope with OL? Does OL widen access?

Discipline Centred Issues. Does OL suit my subject? The answer to this is usually "Yes" but traditionally focused lecturers may argue otherwise. In practice the crucial questions are really "Which elements of my subject are most suitred to this methodology?" and "Which form of OL suits both my subject and my students?"

Institutional Issues. Is the shift to a mixed mode of delivery judged to be a cost-saving device or a route to improved pedagogy - is it concerned with educational effectiveness or educational efficiency? Is this a transformation of the educational instituion or a rationalisation of the institution?

The shift to a mixed mode of operation is not simple and straightforward. It requires a change to the academic culture of the institution. It can be presented as a threat but in reality offers tremendous opportunities for the universities which adopt this mode of operation.

DISTANCE EDUCATION INTO GROUP AREAS WONT GO?

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Last year a daring and innovative proposal was put forward by the South African Institute for Distance Education (SAIDE). A consortium of influential stakeholders in the fields of Open and Distance Learning (ODL) and adult basic education and training (ABET) were asked to collaborate in producing a distance course for adult educators. Workshops and discussions took place during June, July and August 1994 at which the participants, among them UNISA, "committed themselves to a co-operative venture for course development, including materials development" (SAIDE 1994:2).

It was believed that a nationally co-ordinated course, with input from multiple providers and resources upon which all could draw, promised many attractions: while the educational capacities and skills of each participant could be increased, the administrative limitations could be reduced. Given careful planning and co-ordination the scheme represented a rare opportunity which seemed for a short time to be within grasping distance. But for predictable organisational reasons the impetus faded; in January this year it was accepted that "the original plan had failed" and the consortium consoled itself by turning to accreditation and curriculum issues (see Maslamoney 1995). A distance ABET course is still being produced, but responsibility for production and much of the delivery now rests with UNISA. The design of the modules, however, owes a lot to work that happened as a result of the SAIDE intervention.

The central theme of this paper can be simply stated. The UNISA course has inherited a significant and interesting problem which the original SAIDE proposal overlooked. It concerns the use of distance education methods to further development issues in oppressed communities. It may have appeared to be self-evident to the framers of the proposal that ODL when combined with ABET must automatically have socially progressive effects. Whatever the reasons were for making this assumption, the failure to appraise how different delivery models might work when applied to ABET has allowed important debates about the strengths and weaknesses of ODL and the social implications of distance methods to be disregarded. My paper looks at issues that arise from these debates.

The SAIDE proposal - and by implication the UNISA programme - take it for granted that the aim of reversing the legacy of apartheid can be addressed by using a particular kind of curriculum, that is to say one that incorporates the basic democratic and politically progressive values that are now held in common by all comparable adult education courses in South Africa. My objectives are to lay out the practical reasons why, if this is the aim of the course, it may be difficult to achieve, and to demonstrate that the social consequences that result from choosing and using different methods are quite as important as issues of curriculum content. To what extent and in what ways are the methods employed by ODL actually likely to reduce

the particular inequalities and barriers in South Africa? How will distance learning applied to ABET bring together the communities that have been separated by the Group Areas Act? The answers to these questions may not be as unambiguously in favour of distance education as some people have imagined. The arguments I shall use draw on my practical experiences as a Senior Tutor and internal evaluator at the University of the Western Cape Centre for Adult and Continuing Education Certificate programme, and as a past tutor in the Anthropology Department's academic development programme.

The advantages claimed for Distance Education over "orthodox" teaching methods are well known and have become widely accepted. In consequence the assertion that ODL can offer a highly effective developmental tool (SAIDE:5) that should be used in South Africa to make up for lost time seems to be reasonable. But this is a specific and ambitious claim that ought to be closely scrutinised. What practical advantages does a distance version of an ABET course offer over existing programmes? The following list of possibilities appears to be plausible:

Course materials can be professionally produced and tailored to the specific needs of ABET.

Electronic teaching technology will hugely increase the sustainable impact of ABET in terms of student numbers. Radio programmes and tapes, once set up, are cheap and easy to incorporate into existing programmes. Although television is not as educationally effective as some South African authorities have assumed, cost-efficient television publicity and recruitment campaigns can be mounted at national level. This will enhance the student intake of individual providers and at the same time free valuable resources.

An increasing number of curriculum modules will become available and in consequence more choices will be offered to the learner.

Research possibilities will open up in many areas. Larger populations of adult learners will provide more fields for investigation. More systematic techniques can be used.

The national recognition of ABET qualifications obtained by AE students within the proposed national qualification framework, struggled over for years, will become more likely. Professional status will accrue to participating institutions and their staff. The skills and qualifications obtained by students on courses will become horizontally and vertically transferable. The establishment of a recognised career path in Adult Education becomes more likely.

Courses can take current developments into account.

The duplication of efforts and wasteful expenditure which sometimes occurs can be reduced.

The enhanced academic respectability and efficiency of courses will attract

funders to institutions involved in ABET.

I have aranged this familiar list in an order which is intended to suggest the cumulative nature of some of the benefits that might be expected to accrue, long-term, from the realisation of a well co-ordinated programme. Any item might not be realised for a variety of practical reasons. Perhaps some loss of independence, creativity and an increase in bureaucracy has also to be born in mind. All the same, considering the successes achieved by ODL institutions elsewhere in the world, the list does not appear to be fanciful. In many administrative and organisational areas the performance of adult educators in South Africa has until now been patchy and inadequate. It is perfectly feasible to propose that, given determination and co-ordination, more professional educational materials could be delivered more efficiently to a greater number of students and that greater recognition would in consequence be achieved.

The prospect apparently offered, then, is that tangible benefits will accrue to both delivering institutions and intending students. In the words of the SAIDE proposal: "The methods of distance education give us the opportunity to overcome the limitations on numbers of conventional face-to-face education" (SAIDE:3). This is certainly the case and even the partial realisation of some of these results would represent a substantial achievement.

But it is clear that this optimistic picture has not taken into account many complicating factors; things are not as straightforward as the statement that I have quoted above suggests. Let us look at the reasoning that underlies the motivation for a distance version of ABET. It appears to be as follows:

A   Adult education ABET courses are needed in South Africa to help empower a majority of the population, that is to say all the communities and people who have been victimised and oppressed by apartheid.

B   Distance education methods reach more people more quickly than other kinds of education.

Therefore:

C   A distance ABET course can be expected to be more effective than face-to-face education in empowering people and communities in South Africa.

Put like this the argument seems almost too obvious to be in need of further debate. Whether it is justifiable to impute such an uncomplicated simplification to SAIDE and UNISA, the rationale that lies behind the project of distancizing ABET is apparently unquestioned.

To see distance education as having an invariably benign influence no matter what the circumstances of the learner is to view it from the narrow perspective of the educational provider, the top down perspective. As soon as the practicalities of ODL are considered from the bottom up, the evidence appears to align with a more complex and variable picture in which educational strengths and weaknesses depend more on particular situations. The everyday experience of any adult educator must surely corroborate a cautious view concerning

what is achievable in the short and medium term through the use of technology. To assess the extent to which an ODL programme can be expected to be effective in reaching appropriate learners one has to look at the social and political context within which that programme will operate. This is the perspective that has been taken by most of the critiques of distance education. In what follows I draw on the recent review of such approaches by Alan Tait (Tait 1994).

Many ODL systems are now under suspicion of working in ways that deliberately or unintentionally entrench existing inequalities. Criticisms have steadily gained ground since 1980, when it was first suggested that the individualism of the much lauded self-directed learner (eg Paul 1990) reflects educational and cultural models of the elite (Keddie 1980). Particularly worrying in a South African context is the possibility that ODL may in some circumstances accentuate the social marginalisation of already isolated populations rather than result in their inclusion as had previously been assumed (Young 1994). ODL can collude with traditional gender roles, for example, by facilitating women's confinement to the home (Faith 1988, Phillip 1993, Grace 1994). In short:

> An educational methodology that does not recognise the situation of learners
> denies and diminishes them, a risk in particular when large scale ODL systems
> do not have adequate interactive student support .. the location and identity of
> learners is all too often absent in the development of ODL. (Tait 1994).

Perhaps more than anywhere else in the world, the extent to which a Distance programme might be expected to work in South Africa will vary according to highly differentiated local situations on the ground. As everybody knows, the wide state-induced and accentuated social variations that occur in every part of the country are stark; yet the practical situations of learners on ABET courses are a crucial consideration. The issue is important in terms of students, community-based organisations and communities. Distance Education in the accepted sense of the phrase can only work effectively where certain basic conditions hold and in South Africa such conditions exist all over the country in particular localities, but they do not exist for people in many of the areas that ought to be targeted by ABET courses. More details of this scenario are given below.

It is no surprise to learn that after the Second World War Russia and the Communist countries of Europe developed correspondence education systems that were linked directly and closely to the political objectives of their governments. What is interesting is the extent to which a more indirect regime-supporting effect can be shown to operate in the case of UNISA. UNISA, which was established as a correspondence teaching university in 1947, did not operate a colour bar: anybody could enroll on any course. However, examinations and graduation ceremonies were conducted separately and from 1958 students on UNISA courses were obliged to live in racially segregated accomodation. Moreover, the poor quality of primary and secondary education for black South Africans, the typical living conditions and the minimal student support provided, meant in effect that the bureaucratised education on offer was effectively inaccessible for many aspiring students; those who were able to overcome the initial hurdles often found studying in isolation difficult to sustain. Whereas in the Soviet case policies were re-inforced by direct control over the curriculum of the courses on offer,

with UNISA it was and is more a matter of the methods used which in a South African social context act overwhelmingly to favour existing elites and therefore discriminate against the majority.

The model of distance education which inspired the formation of SAIDE in 1992 and towards which UNISA is now slowly and uneasily stumbling is that of the Open University. In delivery terms this model has of course been developed within the social context of the United Kingdom. It assumes a constituency of students within a class-structured but essentially homogenous state. In the U.K. and other industrially-developed countries there are admittedly vast inequalities, but in comparison to the South African situation these occur within a society where educational access - whether in terms of language, culture, physical distance, infrastructure, beliefs, or communal attitudes - while not the same for different communities and classes, can be and are considered to be within bridgeable limits for a large majority of ordinary people. Wherever [s]he lives in Britain, an intending student can easily (again by comparison to South Africa) enroll on a suitable course with reasonable prospects of a successful outcome. Everywhere there is access to a professional library, the postal and telephone systems work (by South African standards) miraculously well, a tutor and a study centre of a roughly comparable standard is normally available, and, finally, the bureaucratic environment is, although not without defects, predictable, and catered for by the OU administrative arrangements. With the possible exception of relatively small enclaves in Belfast and the larger industrial centres chronic violence is unlikely to seriously affect the ability of a student to study.

ODL works well in the UK and other places, then, where the following conditions, more or less, apply:

A nation-wide infra-structure is well established. Transport and communication systems work well and are available in most areas.

Violence is not viewed as a frequent occurrence and does not affect studying conditions.

All students can find a quiet place to study; either at home, a friend's home, or in a readily available public building.

There is some degree of cultural homogeneity from area to area and therefore some comparability between study-groups.

Students are perceived as learners by the OU and by themselves. The course is perceived as a self-contained unit defined by a set of texts that are independent of the learner.

The communities in which students live use texts on a day-to-day basis; community institutions function through texts in a variety of ways as a matter of course. Students are used to handling texts and many textual sources are available to help solve studying problems.

Students study on a monolingual basis except on language courses. Most students are studying in their first language and/or competency in the language of study can be assumed.

The school experience of most students is not one that emphasises rote-learning. Students are able to use without undue difficulties studying methods that focus on conceptual understandings.

But in South Africa a majority of students on Certificate of Adult Education courses (which are to do with ABET) come from localities where few of these conditions hold. In such circumstances education has to bridge gaps that do not exist in Britain or other industrialised countries. Where outreach education is concerned, culturally embedded assumptions can act in ways which separate many courses from their learners, an effect that is aggravated by gaps of language and life style between the students themselves. Everywhere areas are segregated into districts differentiated from each other by language, custom, political affiliation, access to resources and practically everything else that counts in life. The problems created by at first politically but now economically enforced differences, together with the attempts being made to overcome these differences are crucial considerations for the success of ABET projects. Indeed, they are an invariable feature that distinguishes all such courses in South africa.

I list below the attributes of the South African infra-structure that provide educational burdens additional to those experienced by ODL in fully industrialised countries. The poorer areas of South Africa - that is to say all the places which ought to be targeted by a distance education ABET course - have the following characteristics:

Few telephones. The system uses an ancient technology which is slow and frequently fails.

A chronically slow and unreliable postal system. Letters often take 10 days to reach rural areas. Items are on occasions lost. Dangerous areas and informal settlements have no delivery service.

Few televisions in rural areas among poorer households. Most households, however, have radios.

Many areas have yet to be electrified.

Roads in rural areas are in a bad state of repair.

Many places are dangerous to travel in after dark.

Schools tend to be in poor physical condition and prone to vandalism. Repairs are left for long periods. The use of school buildings may be politically problematic (see below).

Homes are over-crowded. I recently visited a student in   Langa who shared a bedroom-cum-living-room with 6 others; there was one table and one electric light. Many homes do not have any books.

There are few libraries, in some areas none. Book collections are small: often donated by NGOs and charities, they are sometimes old and inadequately catalogued or displayed.

Public buildings do not generally have adequate facilities for studying - not just by middle class standards. Studying happens in places where there is often a lot of noise: interruptions are likely.

If these statements, which describe the infra-structural conditions that are more or less typical of those areas which ought to be targeted by ABET, are considered in relation to the features listed as the OU educational environment, it is clear that the social and economic factors which support OU procedures do not exist in many of the locations in South Africa where ABET is most needed. There can surely be no disagreement about this.

So much for the infra-structure, or lack of it. I now turn to the educational consequences that to a considerable extent can be seen as the long-term results of apartheid policies and which exacerbate the difficulties likely to be experienced by an ODL project. These are of course extensive: to do justice to the full social multiplicity of consequences would require detailed ethnographies and it is only possible to sketch the broad domains.

First, then, the direct consequences of the Group Areas Act. The effects of this act reach far beyond the results of the unequal distribution of resources. Social, economic and linguistic networks are always different between adjacent areas. One way of expressing the educational implications of the Act in a few words might be to say that culturally infused discourses have been reinforced which tend to inhibit those used in other areas. It is thus quite impossible for education that is residentially-based to escape such deeply entrenched influences - everyone is affected. In the Western Cape the social divisions between "coloured" Afrikaans-speaking districts, black Xhosa-speaking districts and white English and Afrikaans speaking districts are pronounced and significant. In the words of two students currently studying on a Certificate course at CACE: "the people who are living here are in a big problem whereby they don't trust each other. The roots of apartheid are still strong." "As adult educators we ourselves first need to be liberated from racism before we can help people to overcome this monster."

Additional to the linguistic and racial divides are rural/urban and settled/impermanent divisions that exist between communities. An important characteristic of both these is the inter-relatedness of forms of disadvantage. In rural areas the poor tend to be more disempowered than in urban areas where poor people are at least able to gain some access to resources: "Resources of all kinds tend to agglomerate, to cluster together spatially. The inverse also applies: it is more difficult to introduce resources where few are already in place." (Jacklin 1994). Former Bantustans contain the most scantily serviced districts but detailed documentary evidence is sparse. Regular patterns of migrancy between rural and urban

communities are a further complication and impermanent settlements contain many people who have come from impoverished rural communities who may at any time return there (Mpoyiya and Prinsloo 1994).

Another educationally related consequence of apartheid is the attitude fostered towards studying by the experience that most adults had at school. The old system is discredited in the eyes of many of the people who live in oppressed communities, but models to replace the rote-learning, authoritarian methodology have yet to take hold, and certainly have not been experienced by most adults. New attitudes to studying have to be learned. Students entering Certificate courses, for instance, frequently do not appreciate the importance attached by adult educators to understanding the reasons rather than memorising the facts. Open learning relies on being able to shift students to an intellectual stance where they "have internalised a sense that answers to questions depend on premises and assumptions and the admissability of certain types of evidence" (Northedge 1992). A majority of ABET students in South Africa have no experience of comparing different viewpoints or of weighing evidence. In large measure this is supported by local political attitudes.

The politicisation of South African communities constitutes an educationally significant feature for many reasons. For one thing, it has provided a motivation for many of the adults who enrol on ABET courses; for another, there has been an unwritten concordance between educators and communities that political perspectives should inform virtually every aspect of the adult curriculum. Political awareness and commitment has made for exciting and strongly focussed courses, but there is a downside. After years of struggle and resistance to apartheid a premium has come to be placed on the idea of unity - "an injury to one is an injury to all" and there is a general disinclination on the part of many to openly voice dissent or express disagreement. Outspokenness might be seen as rocking the boat. If debates between people who live in different communities are liable to be perilous, debates between people who live in the same community are often frowned upon: for good reasons many are fearful of stirring up animosities or upsetting local political coalitions. The resulting deficiency of didactic-related skills contributes to what is often referred to as "a lack of a culture of learning".

Yet other educationally related difficulties characterise people who live in communities impoverished by years of segregation: these cluster round the consequences of a lack of familiarity with the uses of texts. In the Western Cape many oppressed communities possess substantial proportions (over 50%) of adults who learned to read and write with relative facility when they were at school. Brought up in a system that reflects an enforced social stratification many of them work for statutory organisations, in manual capacities as cleaners and so on, in ways which confirm their "inability" to cope with with documentary procedures. Schooling to these people has been of little use: "virtually all of the support staff had completed Std 5 and many had Std 7 or 8 ... Despite this fact ... the work involved very little reading or writing." (Watters 1994). Two separate socially-related skills are functionally connected here. A working knowledge of, first, the institutional uses of texts and, second, the ways in which documents are conventionally organised (tables of contents, chapters, appendices, and so on).

Apartheid education denied the importance of texts and emphasised rote-learning. This

method still permeates teaching in South Africa to the extent that aptitudes and skills (often mistaken for "abilities") can appear to be distributed according to apartheid-prescribed contours of race, language and location. I became aware of the pervasiveness of rote learning when, as a tutor concerned with academic development I found that most first year students were quite unable to interpret pedagogic texts. A black university lecturer described the teaching she received as an undergraduate in the following way:

> Memorising concepts not fully understood. Handing out information. Little interaction between students and lecturers. The letter was the source of the information.[1]

In such circumstances it is to be expected that written work, including excellently presented narratives, will not take the form of a logically structured discourse. For people who habitually live in situations where texts are absent, textually presented ideas are difficult to internalise, manipulate, or place in an appropriate social context and many hours of sustained face-to-face interaction and practice are needed for them to be able to do this.

I will summarise the main arguments. In South Africa there is a lack of fit between the methods favoured by distance education and what is pedagogically viable for an ABET course. If institutionalised education is viewed as an organised system consisting of input, process, context and output, the process used does not appear to suit the context; the output is consequently unlikely to fulfill the expectations made for it (see Bhola 1990:54-63). The grounds that I put forward for making this statement are:

> *The infra-structure which services apartheid-oppressed communities is not sufficiently developed to cope with the technological demands that would be made by ODL.*

> *The economic and social constraints on the lives of many people wanting to take ABET courses makes home-based studying highly problematic.*

> *Distance learning methods will not act to reverse the most pernicious feature of apartheid, namely the Group Areas Act. If people only study in their areas, many of the inequalities and divisions will remain unaffected.*

> *The educational and social background of most people is one where texts are not habitually used. A substantial degree of face-to-face interaction is pedagogically essential.*

Depressing as the state of affairs suggested here is, the advantages to be derived from ODL viewed from a top-down perspective are nevertheless quite immune to these debates, since the latter are based on a bottom-up approach. One can still accept the soundness of the technical and managerial arguments. Supposing what has been argued here is more or less

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[1]. This exerpt is from a series of interviews I carried out at the University of Zululand for the UWC Education Policy Unit in May 1994.

correct, given the urgent need for the Research and Development Programme to be effectively delivered it would be an over-reaction to jump to the conclusion that distance education methods are totally inappropriate and should be jettisonned in favour of night schools and the like. The central question is not whether there should be a distance version of ABET. It is how to modify ODL methods so that they do not negate the aims of ABET. Any delivery system has to be constructed with a view to coping with, ameliorating and reversing the complications we have discussed. But one has to admit that it is a tall order. The system has to work in conditions where the physical means of delivery are lacking, peoples' experience of schooling and texts are of rote-learning and a pressing need is to enable people to escape the conditions that render learning problematic.

Some possible options

The situation, then, is that serious drawbacks are involved in using Distance Education to promote ABET and that these have to be allowed for. From an input point of view ODL is efficient, but unless the problems of delivery are faced the effectiveness of any programme in terms of goal attainment will be compromised. ODL, on its own, flying solo without properly planned support and back up, will probably miss the ABET target: it will fail to reach poorer communities and educational inequalities will remain, or even be exacerbated. Organising an effective delivery and support system in a South African environment is therefore just as important as designing a curriculum. And even if extra support is forthcoming, the fact is that some, perhaps many, areas are likely to remain inaccessible to all possible modes of delivery.

The need for effective learner support systems has been generally acknowledgeded for many years and there is an extensive literature on the subject. The educational changes that would be likely to overcome the effects of apartheid have to go far beyond considerations of tutorial systems. UNISA has started moving towards a system of orthodox study-centres (Oosthuizen 1995) but the purpose of study-groups is seen in terms of attempting to mediate and interpret pre-determined texts. An effective strategy to deliver the ABET distance project is simply not in place. The paper concludes by briefly considering four alternative delivery possibilities.

The simplest option - that of producing a distance course using UNISA's resources and nothing else - is probably the least satisfactory solution. UNISA will compete with existing programmes, damage their marketability and financial viability, offer a second rate alternative in terms of learning experience and at the same time be least effective in terms of take-up by poorer or less educated communities. The net effect could even be regressive: educational inequalities might increase and ABET opportunities in communities most in need of them decrease.

A solution sketched in the SAIDE Proposal was to train part-time tutor counsellors living in the community. While an advance on the UNISA option, on its own this also has drawbacks. It would not address the effects of the Group Areas Act and an unintended outcome would be to maintain the _de facto_ segregation of learners. The views and cultures of other communities would to some extent be misrepresented. In addition, unless there was an affirmative input in resources, under-resourced areas would remain disadvantaged as economic inequalities always reinforce educational inequities.

A more extensive solution would be to utilise regional study-centres for study-weekends, study-groups and learning activities in ways that were pioneered at the Centre for Adult and Continuing Education at UWC. The objective here is not just to strengthen distance learning elements with regular face-to-face activities, but to incorporate the learners' experience as a valued part of the curriculum. Adequately planned and funded this method has the potential to overcome some of the problems discussed above. It has a feature that is very important in the South African context: learning with people within their communities is balanced by learning with and about people from other areas.

The most radical possibility is suggested by the system operated on behalf of the provincial government of Ontario called Project North. Established to act as a bridge between urban-based institutions and community-based learners (Anderson 1991), this project attempts to recognise the personal situation of learners by directly engaging students in the delivery process itself. In essence the objective is to improve the educational salience of Distance Learning for ABET by giving actively negotiated roles to the delivery agent and the adult learner. The balances of relations between course providers and course participants implied by such a delivery model could be summarised as follows:

Distance Learning methods are balanced with face-to-face activities.

Fixed texts in modules planned by course organisers are balanced with dynamic elements which arise as a result of students' situations.

Home-base learning activities are balanced with activities in learning centres.

In other words the assumption that courses are self-contained units defined by sets of texts that exist independently from learners, communities and learning circumstances is modified to take into account situations where communities and learners have identities that are culturally distinct from that of the course provider. Formal curricular elements are retained as an essential bedrock, but a course with the professed aim of encouraging the active participation of communities has to gain credibility by practising in terms of both delivery and content what is preached by its curriculum. In this model customised elements are incorporated by negotiating with participating communities and assessed according to local criteria.

Although the texts currently produced by the OU incorporate printed material with built-in interactive aspects, it appears to me that a delivery model that is appropriate for the UK fails the situation confronting ABET in South Africa. In spite of untypically high levels of

political awareness among adult educators (see Torres and Schugurensky 1994) few people in South Africa seem to have considered the social implications of using Distance Education methods which were designed to fit European social contexts. To view ODL methods as neutral tools whose use will automatically further the interests of the RDP is indeed naive and does not resolve the complexities of assisting the development of democratic and open political structures.

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Analysis of Learner Characteristics and Group Functioning in Technology-mediated Distance Learning

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Introduction

New telecommunications technologies provide opportunities to design learner centered learning environments where the learner is central to the learning process and is in control of the learning experience. The learner can be connected electronically to several resources such as the instructor, tutors, other learners, the library, and online databases, and the connection can be interactive with the learner constantly interacting with these resources and receiving feedback. The instructor is only one type of resource that the learner can access and the instructor's role would be that of a facilitator linking learners to other resources and providing adequate support to empower the learner to exercise control over the learning experience. One important aspect of such a learner centered system is the ability to interact with and work collaboratively with other learners who can support the learner in the learning process.

Research has indicated that collaborative group work can increase motivation, completion rates, student satisfaction and depending on the number of students in the group, even performance (Wells 1990) [1]. Davies (1989)[2] observes that "effective learning should be both active and cooperative" (p. 228). Collaborative or group learning is premised upon a learner centered model that treats the learner as an active participant in the learning process involved in constructing knowledge through a process of discussion and interaction with learning peers and experts (Harasim 1989;[3] Harasim 1990)[4]. "Knowledge is not something that is 'delivered' to students in this process, but something that emerges from active dialogue among those who seek to understand and apply concepts and techniques" (Hiltz 1990, 135)[5]. According to Bouton and Garth (cited in Harasim 1990)[4], learning is an interactive group process whereby the learner actively constructs knowledge by formulating ideas into words and then by building upon them through the reactions of others. Peer interaction among students has been identified as a critical variable in learning and cognitive development: the conversation (verbalizing), multiple perspectives (cognitive restructuring), and argument (conceptual conflict resolution) that are a part of group learning may be responsible for greater cognitive development in groups than when the same individuals work alone (Harasim 1990)[4].

Discussing conditions for effective collaborative learning, Dillenbourg (1995)[6] notes that the wide range of conditions can be clustered into three categories: group composition, task features and the communication medium. He further observes that social negotiation and interaction with peers is an important aspect of collaborative learning as members learn to think interactively. The importance of social negotiation has also been underlined by constructivism that has recently begun to influence the design of technology mediated learning environments. Jonassen (1994)[7] discussing the implications of

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constructivism for instructional design observes that purposeful knowledge construction may be facilitated by learning environments which a) provide multiple representations of reality, b) focus on knowledge construction and not reproduction, c) provide real world case-based learning environments, d) foster reflective practice, e) enable context and content dependent knowledge construction, and f) support collaborative construction of knowledge through social negotiation. Constructive learning environments may promote collaborative learning which involves the active construction of knowledge through social negotiation, only if participants can relate to one another, understand and learn from one another and share a common goal.

Social negotiation has been difficult to arrange in distance education except in a face-to-face setting until the advent of new communications technologies that make such interaction possible. Communication researchers (Svenning & Ruchinskas, 1984)[8] have pointed out the need to examine group dynamics in interactive distance learning settings. They observe that research on group dynamics has been conducted in laboratory settings and express the need for future research to be carried out in teleconference classes and in organizations that utilize teleconferences.

Because of the importance of understanding collaborative learning and group work in distance education settings, this study was undertaken to examine whether there is a relationship between individual learner characteristics and group functioning in distance education classes that use two-way interactive technologies to facilitate the learning process. Such a study would shed light on which types of learners would benefit from group work in distance classes where the interaction among students and between the instructor and students is mediated by communication technology.

The Purpose of this Study

The main purpose of this paper is to discuss the results of a study that examined the interaction of adult learner characteristics with group functioning in two distance classes which utilized audiographics as the main delivery medium and electronic mail as a supporting medium. The objective of the study is to determine the type of learner characteristics that interact positively with group work in distance classes. This study was conducted over a two semester period in Fall 1991 and Fall 1992.

The second purpose of this study was to determine if there were similar patterns between learner characteristics and group functioning in traditional on-campus classes that were taught face-to-face that had similar group work requirements. This second aspect of the study was undertaken to serve as a basis of comparison with the distance classes to determine if certain features were unique to the distance setting or whether there were common interaction patterns in both distance and traditional settings. This study was conducted over a two semester period in Fall 1991 and Fall 1992, comparing traditional on-campus classes to the same distance classes described above.

The predominant delivery medium for the distance classes was an audiographics system utilizing two phone lines, for audio and data. Data and graphics were transmitted via a high speed modem, a computer, graphics tablet, scanner, and a printer driven by GTCS/Worldlinx software. The system was two-way interactive enabling both sites to talk to each other and share graphics and text in real time. Electronic mail was used mostly for learner support between class sessions, enabling the instructor and individual learners to communicate with each other and for group members to discuss their group projects with each other.

Methods

Subjects

For the main study, two graduate classes taught at a distance by different instructors at the University of New Mexico in Fall 1991 and Fall 1992, using audiographics and e-mail were selected. In these two classes, there were a total of 24 on-campus and 10 off-campus or distance learners, with a total of 34 students. In Fall 1991, the distance class had 15 students, 10 on-campus and 5 off-campus, and in Fall 1992, the distance class had 14 on-campus and 5 off-campus students. The on-campus site was at Albuquerque and the distant or off-campus class was at Los Alamos separated by about 100 miles of rugged mountains in the State of New Mexico. These two classes are referred to hereafter as the "distance classes," and the Albuquerque students as on-campus, and the Los Alamos distance learners as off-campus students. The classes were taught simultaneously at Albuquerque and Los Alamos using the audiographics system with the instructor at the Albuquerque site during most of the class sessions. The instructors taught two classes from the Los Alamos site during the semester. The on-campus and off-campus students met face-to-face at a mid point between the sites, in Santa Fe, once during the early part of the semester to get to know each other.

For the second purpose of the study, four traditional classes (N=77) taught face-to-face on campus at Albuquerque in Fall 1991 and Fall 1992 were selected for comparison with the distance classes. These classes are hereafter referred to as "traditional classes."

Students in both on and off-campus classes were mostly working adults who were pursuing a graduate degree in Training and Learning Technologies and attended class after work in the evening. The distance learners were previously taught in a face-to-face setting with the instructor driving or flying up to Los Alamos to teach the class. These learners were unhappy that they now had to take the classes in a distance education format with the added burden of having to learn the technology to participate in the class. The majority of on-campus students on the other hand, perceived the opportunity to learn in a distance education format as an additional learning experience giving them first hand experience in the use of distance education technologies. The on-campus learners were more experienced than the distance learners in the use of technologies for instruction as some were majoring in the field of instructional technology. Further, the on-campus

learners had better access to support for the use of distance education technologies than the off-campus learners.

Procedure

In order to assess learner characteristics in distance and traditional classes, two instruments were used: a) a demographics instrument that sought input on age, gender, ethnicity, educational experience, and the number of years away from college, and b) the revised Kolb Learning Style Inventory (1985)[9]. As indicated in Figure 1, the Kolb Learning Style Inventory (LSI) is based on a Cartesian coordinate consisting of active experimentation versus reflective observation on the x-axis and concrete experience versus abstract conceptualization on the y-axis, yielding four dominant learning styles: Accommodator, Diverger, Assimilator and Converger.

Insert Figure 1 about here

Accommodators perceive experience concretely and process it actively. They have the ability to learn primarily from "hands on" experience, and are sensors, feelers and doers. Divergers, take in information concretely and process it reflectively and are best at viewing concrete situations from many different points of view. Assimilators begin with an idea or abstract concept and process it reflectively and are good at understanding a wide range of information and putting it into concise, logical form. Convergers take in experience abstractly and process it actively, and are best at finding practical uses for ideas and theories.

The LSI was selected because it is based on the experiential model of learning which is relevant to many adult learning situations. Kolb (1984)[10] observes that an effective learner requires all of the four abilities: the learner must be able to get completely and openly involved (Concrete Experience: CE), to reflect upon and interpret these experiences (Reflective Observation: RO), to create concepts that integrate these observations into logically sound theories (Abstract Conceptualization: AC), and to use these theories to make decisions and solve problems (Active Experimentation: AE). However, he argues that each individual has a preference for one way of approaching learning, a dominant style. This study was undertaken to determine whether individuals who differ in their styles of learning would interact differently with group work in distance and traditional classes.

The LSI is one of the most widely used learning style instruments with a variety of adult populations. Curry (1983)[11] reported that the LSI has an average test-retest reliability of .58 and an internal consistency of .69, and has concluded that the test-retest reliability and internal consistency of the LSI is adequate for its role in cognitive style assessment. A careful assessment of currently available learning style instruments (Schmeck 1988;[12] Torrance & Rockenstein 1988)[13] and their applicability to this study indicated that the LSI was the most appropriate for the present study.

The interaction of learner characteristics with group functioning was determined by administering a questionnaire developed by the researchers to both the distance and traditional classes which addressed several variables related to group functioning. These included satisfaction with the group, group communication, group climate, decision making, conflict, group process, goal setting and leadership. The questionnaire was based on a likert scale of 1-5, with 5 indicating the most positive rating. The questionnaire, the LSI, and the demographic instrument were administered to both traditional and distance classes in Fall 1991 and Fall 1992, with a return rate of 96%, indicating the following return rate for both groups: distance (N=34), and traditional (N=77).

The distribution of learning styles in the distance and traditional classes is indicated in Table 1. In the distance classes, there was a total of 4 Accommodators, 12 Convergers, 9 Assimilators, and 5 Divergers. Four students in the distance classes did not fill out the LSI. In the four traditional classes, there was a total of 24 Accommodators, 18 Convergers, 18 Assimilators, and 14 Divergers. In the traditional classes, 3 students did not fill out the LSI. Missing data from those who did not fill out the LSI were accounted for in the data analysis.

Insert Table 1 about here

The interaction of learner characteristics and group functioning in the distance classes was analyzed using one-way and two-way ANOVAS. Analyses of variance was also used to test the interaction of learner characteristics and group functioning in distance vs. traditional classes. Multiple regression analyses were performed to determine predictors of student satisfaction in both distance and traditional classes.

Results and Discussion

Group Functioning in Distance Classes

In the Fall 1991 distance class, groups worked at a distance, where each group consisted of members both on-campus and off-campus. The groups were given limited time during class for audiographics conferences and were asked to communicate with each other via electronic mail. Students were trained to use a group distribution list for communicating electronically. In the Fall 1992 class, groups were comprised of students at the same site. The group composition was different in both semesters, therefore, the data were analyzed for both semesters as one set, and then separately for each semester.

There were no significant differences in the interaction of each of the demographic variables: age, gender, ethnicity, educational experience, and the number of years away from college, and group variables: group communication, group climate, decision making, conflict, group process, goal setting and leadership. This means that the demographic variables analyzed did not shed light on which type of learner characteristics would be more conducive to group functioning.

There were no significant differences in the interaction of learning styles measured by the LSI and the group variables for both semesters. However, interaction of class type (whether students were on-campus or off-campus) and the group variables, indicated a significant difference for goal setting in a one factor ANOVA ($F=8.45$, $DF=1,32$, $p=.0066$). The on-campus groups were much more satisfied with goal setting (mean=15.25) than the off-campus groups (mean=12.1). Since the groups were composed differently for both semesters, a separate analysis was done for the 1991 distance class where each group was comprised of on-campus as well as off-campus students, in order to examine each of the group variables. This analysis also indicated a significant difference between the on-campus groups and the off-campus groups for goal setting ($F=10.6$, $DF=1,13$, $p=.006$). The on-campus students were more satisfied with group goal setting (mean=15.1) than the off-campus students (mean=10.8). This finding indicates that goal setting was a problem for groups that worked at a distance in both classes. The distance learners in both semesters did not have easy access to the instructor to clarify group goals. For the groups that worked at a distance in the Fall 1991 semester, the difficulties experienced with the communication process between groups may have been a major barrier.

Another group variable that showed significant difference between the on-campus groups and the off-campus groups was group satisfaction ($F=10.50$, $DF=1,32$, $p=.0028$). The on-campus groups were more satisfied with the group experience (mean=25.46) than the off-campus groups (mean=21.3). This significant difference was also indicated by the post hoc Fisher PLSD (2.614) and Scheffe F-test (10.498) at 95%.

These results indicate that distance learners need constant support when engaging in group work at a distance. The physical absence of an instructor who can be instrumental in resolving problems experienced by groups may be a factor that contributes to less satisfaction with groups when group work is carried on at a distance. As discussed earlier, a majority of the off-campus learners were not as proficient in the use of technologies as their on-campus counterparts and these distance learners were also frustrated by the fact that they no longer had an instructor who could teach them in a face to face setting. The differences noted for on-campus vs. off-campus students may be a reflection of this frustration and the difficulties experienced in the communication process that is so crucial for effective group functioning. An implication of this finding is that when assigning group work to distance learners, careful consideration need to be given to the support that will be available to these learners to carry on group tasks. Special

attention need to be paid to providing easy access to media that will be used to facilitate communication between group members

Group functioning in the Fall 1991 class in which the groups worked at a distance (where one group was comprised of students at both sites,) is discussed here in detail as this can shed light on the problems experienced by students who do group work at a distance. In this class, three groups were formed according to interest in the topics assigned for a research paper, and each group of 4-5 students was comprised of students from the on-campus and the off-campus sites. In order to facilitate group interaction, students were taught how to use an e-mail group distribution list and could check out a modem for the duration of the course. The groups were also assigned a short period of time during class to communicate with each other on the audiographics system.

It was evident from the computer transcripts of the group distribution lists that all three groups used computer mediated communication (CMC) to communicate with each other. Students used CMC to a) share library and database resources relevant to their paper, b) inform the distance members about instructor suggestions and feedback after the on-campus students met with the instructor, c) upload outlines and drafts for comments by group members, d) discuss key issues or arrive at a group consensus, e) solve technical problems, and f) interact socially with each other.

Students both on and off-campus found the group project the most challenging and, for some, the most frustrating. The major problem was related to the difficulty of communicating at a distance. One group which had members communicating frequently via e-mail, functioned well. However, in other groups, students hardly got online which led to considerable frustration between members. Most of the initial problems students experienced with the use of e-mail were related to not knowing how to use a modem and the communications package in order to access the networks. They had the support of the coordinators and the computer lab personnel at each site to solve technical problems. However, since most students were working adults they were reluctant to spend the extra time and energy to get on-line frequently from home, or go to the computer lab to use the system. Most groups felt the need to meet face-to-face to resolve conflicts and come to a consensus. Therefore, unless all group members are competent and frequent users of e-mail, group work at a distance can be very difficult to accomplish. Without a communication medium other than the telephone with implied long distance costs that students are capable of using, group functioning at a distance can be frustrating.

In spite of the frustrations students experienced working at a distance on group projects, the quality of the group research papers and presentations was outstanding. On the whole, they were much more innovative and thought provoking than group projects that had been completed in traditional face-to-face classes. Part of this may be due to the fact that groups had to work much harder to communicate with each other and achieve a common goal. It was evident that group members learned from each other and complemented each other's strengths and weaknesses. Further, they learned how to access databases through CMC which they might not have learned to access in a

traditional class.. The group projects were of a much higher quality than the individual position papers students completed. After the class was completed, one group continued to work with the instructor to refine their group paper for publication and was successful in publishing it in a refereed journal.

Comparison with Traditional Classes

Group functioning in the distance classes was compared to group functioning in non-equivalent traditional classes which had similar group projects to determine whether specific learner characteristics were more conducive to group work in both settings. There were no significant differences between each of the demographic variables and group functioning in the traditional classes.

A two factor ANOVA examining the interaction of learning styles, class type (traditional vs. distance), and the group variables indicated a significant difference for goal setting and group process ($F=6.07$, $DF=1,97$, $p=.0155$, and $F=7.54$, $DF=1,97$, $p=.0072$,) respectively. Accommodators and Divergers in the traditional and distance groups rated goal setting differently. The Accommodators in the traditional classes were much more satisfied with group goals (mean=16.92), than the distance classes (mean=13.6). The Divergers in the traditional classes were much more satisfied with group goals (mean =17.79), than Divergers in the distance classes (14.8).

A similar pattern was observed for group process. The Accommodators in the traditional classes were much more satisfied with group process (mean = 31.75) than the Accommodators in the distance classes (mean = 26.6). The Divergers in the traditional classes were much more satisfied with group process (mean = 32.357) than the Divergers in the distance classes (mean = 25.8). Therefore, in terms of group activity, the Accommodators and Divergers in traditional settings are much more satisfied with group goal setting and process than the Accommodators and Divergers in distance settings. Harb, et al. (1993),[14] when analyzing the learning activities most suitable for the four Kolb learning styles indicated that both Accommodators and Divergers learn well in group projects and in group problem solving. Therefore, in the present study, it was interesting to find that it was these two learning styles that rated their satisfaction with group goals and group process differently when comparing traditional vs. distance environments. When designing group projects for distance classes, the kind of environment in which these groups will work need to be considered carefully. Not all learners will be satisfied with group projects in distance classes. If a large number of Accommodators and Divergers who generally work well in group projects are enrolled in distance classes, their reactions to ideal group learning environments and support needs at a distance should be solicited, and group projects in the distance classes should be designed with these needs in mind.

A multiple regression analysis was conducted to predict overall satisfaction with the learning experiences in both traditional and distance classes from the group variables discussed earlier. It was found that group satisfaction and group process were the best predictors of overall satisfaction (F=4.99, DF=8,118, r^2=.20, p=.0001). This could be due to the fact that in both distance and traditional classes, group projects were major course requirements. In such instances, if students were satisfied with their groups and the group process, they were more likely to be satisfied with the overall learning experience.

In another analysis, multiple regression was used to predict overall satisfaction in both distance and traditional classes with several other variables: learning styles, class type (traditional or distance), group satisfaction, gender, ethnicity, and age. Only group satisfaction predicted overall satisfaction with the learning experience (F=3.38, DF=6,23, r2=.33, p=.0154). Thus, 33% of the variance was explained by group satisfaction. Therefore, when group projects are one of the major requirements of a class either in a distance or traditional setting, student satisfaction with their own group can be a major predictor of overall satisfaction with the learning experience.

Conclusions

The findings of this study indicate that learner characteristics such as age, gender, ethnicity, educational experience, the number of years away from college, and learning styles as measured by the LSI did not show significant differences in the way learners interact with group functioning in technology mediated distance classes. Results of this study showed that the learning environment (whether students were on-campus or off-campus) rather than learner characteristics was an indicator of how students differed in their reaction to group functioning. On campus learners who were more sophisticated in the use of distance education technologies, and had better access to the instructor and technology were more satisfied with group work than the distance learners. This finding has implications for designing group work at a distance. It is important that sufficient support systems that relate to the communication process are in place to enable the distance learners to function effectively in a group.

When group functioning in the distance classes was compared to group functioning in non-equivalent traditional classes which had similar group projects, a significant difference was apparent in goal setting and group process The Accommodators and Divergers in the traditional classes were much more satisfied with group goals and group process than those in the distance classes. Group projects and group problem solving are cited as preferred learning activities for these two learning styles (Harb et. al. 1993)[14]. Therefore, it is important to investigate the kind of support Accommodators and Divergers prefer when engaged in group activities at a distance.

It was found that in both traditional and distance classes, satisfaction with the group, and satisfaction with group process were the best predictors of overall satisfaction with the learning experience. When group projects are a major part of course

requirements, satisfaction with the group will be a major predictor of overall satisfaction with the learning experience.

This research should be considered as a preliminary study that was undertaken to examine the interaction of learner characteristics with group functioning in distance classes. The results cannot be generalized because of the small sample in the distance class. Because of the small sample size there was no even distribution of subjects in the four LSI categories. This may have impacted the results. In studying groups, it is also difficult to control for all the variables that impact group functioning such as participants' backgrounds and experiences, degree of cooperation, and how the group organizes itself. Further research examining these variables and involving larger samples is necessary to validate these results. The authors are continuing to examine these variables in a variety of distance education settings.
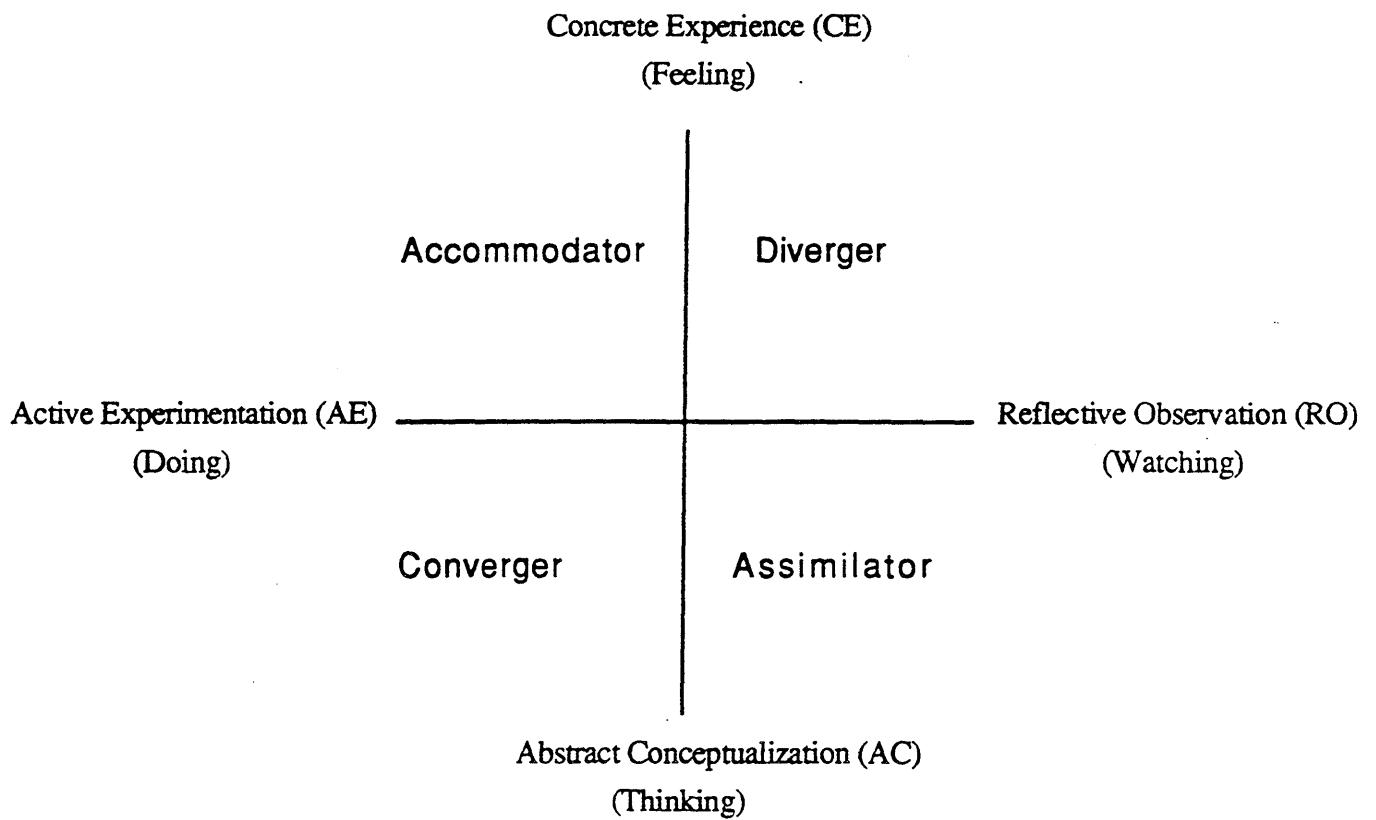
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Table 1

Learning Style by Class Type

Class Type	Learning Style				
	Accommodator	Converger	Assimilator	Diverger	Total
Distance					
On-campus	3	8	6	3	20
Off-campus	1	4	3	2	10
Total: Distance	4	12	9	5	30
Traditional	24	18	18	14	74

Figure 1: The Kolb Learning Styles Matrix

Concrete Experience (CE)
(Feeling)

Accommodator | Diverger

Active Experimentation (AE) _____|_____ Reflective Observation (RO)
(Doing)   (Watching)

Converger | Assimilator

Abstract Conceptualization (AC)
(Thinking)

Adapted from Kolb (1985)

DIMINISHING SOME OF THE COUNSELOR'S POWER

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Within the framework of distance learning there are two main circumstances in which the student can meet with the counselor in order to address questions of learning strategies. He can confer with the counselor in either a learning strategy workshop or in an individual session. The workshop usually includes ten to twenty students - from various courses, or from a single course - who meet once a week, for three to four weeks on average, to discuss various questions concerning their ways of learning. Frequently the students who attend the workshop are new students, but the number of experienced students who wish to participate in these workshops is increasing.   The private session ususally consists of a one, or one and a half hour meeting, and the recurring contacts with the student last, in principle, as long as both student and counselor deem appropriate.   The interaction with the student is based on the counselor`s knowledge of ways of defining text structures (Kintch and van Dijk), analyzing meaning (Bereiter and Scardamlia), using various strategies such as representing graphic outlining of texts, or any other strategy which assists the learning process (Anderson, Armbruster, Meyer, Miles, Palmer).

By definition, the field of counseling is student-centered. The main aim of the encounter - either individual or group - is not to transfer new and unknown information to the students, but to reassess their ways of dealing with the information and ideas which they are expected to address in a manner appropriate to academic demands and circumstances. In other words, as a precondition, the student-counselor encounter places the student himself in a visible position and focuses all the attention upon him - his behaviour, actions, approach, and feelings. However, the question to be asked is whether this general principle of focusing on the student is actually realized by the counselor's general attitude, actions and behavior during the session. Can individual sessions and workshops be distinguished from each other by the degree of student-centeredness? What can make an indivudual session or a workshop more student-centered?

We would like to suggest that a learner-centered approach to counseling requires the counselor to diminish some of the power bestowed upon him - the power to dominate the learning situation. Being in the position of counseling bestows upon the counselor the power to control the learning situation, to plan it and influence its development. It is important to retain these aspects of control in order to insure a professional relationship with the students. However, delegating some of the counselor`s authority and responsibilty to the student, can have a marked effect on the student-counselor interaction and its consequences. Creating a dialogue with the students, enabling them to present solutions to problems they encounter, as well as questions about learning, are examples of delegation of the counselor`s authority. The counselor should confine his knowledge of the field to situations in which it is required or demanded by the students.

Before describing the operative techniques of this principle, we would like to briefly address the question of applying learner centered approaches to adults. One could argue that at the university level, student centered learning does not have the same significance it has among school children, especially at the elementary school level. Adults approach learning on their

own accord, expressing a desire to engage in it, understanding its value, advantages and demands . It could be argued that tutors and teachers of adults should focus their attention on content rather than students. One could argue that it is not necessary to give priority to the indivudual adult university student. However, it is our belief that successful learning, at any age, must involve the students, and that successful counselor intervention in their learning strategies must address their real needs. In order to do so, content cannot be central. Rather, the needs should be examined by both counselor and student, and decisions about learning strategies can follow from that.

1.THE INDIVIDUAL SESSION

In recent times when the student-centered approach has come into the consciousness of educators, attempts are constantly being made to involve the student in his learning, to help him realize the meaning and significance of the facts with which he is faced. The new (or rather - renewed) student-centered approach encourages teachers to delve into topics at the expense of "covering" a greater amount of material, since it is believed that it is the manner of approaching the material, dealing with it, thinking, reading, writing about it which is important. Student-centered educators assume that future academic needs will be better answered if the student acquires effective modes of learning, rather than large quantities of information, easily lost with time.

New approaches attempt to make learning more creative and meaningful. However, teaching strategies do not (and should not) negate the fact that schools, whether content-centered or student-centered, are concerned with the acquisition of knowledge. Teachers are bestowed with the responsibility of transferring knowledge to students. All teachers take upon themselves this responsibility, whether or not they are attentive to the student's personal and psychological needs.

The counselor's aim, on the other hand, is to address the students` personal needs which arise during the course of study. General or specific questions which involve learning and modes of learning are all part of the counselor's field of concern. In order to reach this goal the counselor should first listen to the student express his questions, then probe and encourage him to describe present concerns in detail, or rather, in as much detail as he is willing to display. The counselor attempts to find out how the student studies, reads, writes, studies for exams, and combines his studying with work and home responsibilities.
In order to elicit information about the student's study habits, one could explore with the student recent and past ways of studying. What does he do? Where does he study? When? How many hours does he devote to his studies? What kind of feelings does he have when he is studying? What is his aim in studying? How does he feel about grades? Does he attempt to merely pass the exam? to get the best mark possible?

It should be stressed that not all these questions should be posed to every student in every private session. The counselor should go along with the student, trying to help him define his study habits, without imposing irrelevant or intimidating questions. Questions can be asked according to specific topics raised. The student's presentation may be very detailed, may include his study habits in the past, his success and failures in other learning institutions. On the other hand it may be focused only on the specific problem currently troubling the student. The counselor must go along with the student's way of presenting the issue.

Similarly, responses to the student's reading habits could include the following questions: How does he read? Does he distinguish between different modes of reading? What is he actually asking himself when reading? Does he "talk to the book"? Is he an "active" reader? Does he remember what he reads? Does he understand the text he is reading? most of it? some of it_? How does he react when he doesn't understand? Does he make several attempts at reading a text? each passage? whole sections? When does he quit? Does he change his approach when he feels that he is inefficient? Does he summarize what he has read? in a notebook? in the margin of the book? Does he make other kinds of notations to himself as he reads? Does he read quickly? slowly? When attempting to portray the student's present reading habits one could ask: How does the student read a question which prompts the written exercise? Does he find it difficult to understand the meaning of the question? the question's focus? the task which he is expected to perform? Does he devote a great deal of time to writing tasks? Does he feel he is devoting too much time to writing tasks? What are some of the instructor's remarks on the papers he writes? Is the student requested to add detail? to write more clearly? more accurately? Is he told his response is not relevant to the question posed? Questions about studying for exams could be approached by questioning the student's current situation: When does he study? How much time does he devote to studying? How does he study? Does he read the text? summarize it? If so, how does he summarize it? Does he study by himself? with others? Is he anxious about exams? Before the exam? during the exam?

There are several reasons for encouraging and helping the student portray his current learning style. The detailed description is of course significant for enabling the counselor to define the situation.   The counselor can arrive at various conclusions while listening to the student's presentation. At times, for example, the description may reveal proper learning habits which suit the demands of the course, but an insufficient amount of time dedicated to studies; at times, good learning habits and quick understanding of the material are revealed, accompanied by unrealistic expectations.

In other cases, the counselor may feel that a change of the student`s approach could be helpful. However, solutions and suggestions made by the counselor must be related to the student's learning style and to his point of departure. In order to enable a required change to take place the counselor must first recognize the student's difficulties, approach, and learning style.

In addition to its diagnostic value from the counselor`s point of view, it is important for the student himself to exhibit his own study techniques and learning difficulties. The student's verbal expression of his learnig style may help him clarify for himself difficulties which he faces in his studies even before any remedial work is attempted. Frequently during the description the student recognizes patterns which he himself had not been aware of before actually expressing them. Solutions may follow in a natural way by the student himself, or through a joint decison of both student and counselor. As mentioned earlier, the field of counseling is not material centered and is not primarily concerned with transferring information to students. On the contrary, all topics dealt with are already familiar to the students requesting assistance. Since they themselves already have some idea of possible solutions, counselors should encourage them to define for themselves possible learning strategies. The counselor will prescribe strategies which he feels are appropriate, but he will also help the student analyze, reach conclusions and find solutions for himself. In other words, although remaining in control of the session the counselor can chose to diminish his active role as speaker and prescriber of solutions, and increase his role as an active listener.

Following the meeting between student and counselor, a written description of the discussion should be made noting difficulties raised and questions posed by the student. Putting thoughts down on paper enables the counselor to review the situation and to clarify for himself the student's point of view. It forces the counselor to define the student's current position and difficulties, as well as to summarize recommendations made during the session.

2. THE LEARNING STRATEGY WORKSHOP

Like the private session, the learning strategy workshop is also student- centered in the sense that it is not content-driven but focused on the student's approach to the content. In this case too, one can emphasize techniques of instruction which strengthen the focus on student rather than content.

In the learning strategy workshop it is not feasable to enable each student to describe at length his past or current difficulties and questions. Unlike psychotherapy workshops, this type of workshop does not stress psychological processes, and does not focus on reaching a deep understanding of the reasons behind previous educational failure and success. But, although a lengthy dialogue between a single student and counselor will not usually take place, time should be devoted to allow the students to express difficulties and questions which motivated their particiation in the the workshop.

There are several reasons for stressing the students' presentation of their own difficulties. First of all, verbal expression within this context, as in the private session, can help the student reach a deeper understanding of his difficulties. Moreover, in the workshop a presentation by one student can further the understanding of other students who have felt or experienced similar difficulties, which they could not describe.

It is possible for the counselor to present a well organized, complete and well defined set of difficulties which students generally encounter, followed by a well defined, logical and convincing set of solutions. However, the advantages of insisting on the students' own expression are obvious: they are the addresses of the messages which the workshop is intended to present, and they should be the ones who define the questions. The message will be better understood and accepted if felt to be relvant to the students' actual needs.
In addition, a list of questions posed by the students can define for the counselor the scope of the workshop. If certain issues are not raised by the particular group of students participating in the workshop, it may not be worthwhile to address them.

Another reason for stressing the students' own expression of their difficulties is that through their discussion the counselor is given the opportunity not only to acknowledge specific questions, but to present to the students a full scope of the various issues which provoke difficulties, and to show them the relationship between the various broad issues. The general topics raised may include combining studies with other responsibilities, reading, writing, studying for exams. Questions concerning each of the broad issues specify the types of difficulties which students encounter in the field. For example, under the topic of writing, perhaps people will state difficulties in understanding questions to be answered, difficulties in getting started, in organizing thoughts, or knowing how much to write - what to include and what to exclude in one's answer. All questions raised by the students help to portray the wide range of topics concerning the workshop participants. At a later stage, connections between various issues can be made, such as the relationship between how one first approaches a text

and how one studies for an exam based on that text, or similar strategies of reading a text and reading a question.

One of the important aims of the counselor's work with the students is to explore the principles behind the learning strategies. The intention is not to recommend specific learning strategies, but to understand how these techniques can encourage one to be an active learner, who fully participates in the learning process. A view of the different stages of learning and the relationship between these stages can often help the student realize the scope of work demanded from him.

An additional reason for insisting upon the students' own presentation of difficulties and questions has already been dealt with in relation to the private session and is related to the nature of the field. As mentioned, the information dealt with in the learning strategy workshop and in the private session is often known to the students to a great extent. Many have in the past dealt, in one way or another, with topics related to the field. Despite the fact that the knowledge seems to be known to the student apparently it is not applied and perhaps not understood. It is therefore essential for the counselor to refrain from presenting information with which the student is already familiar. Doing so may cause the information to be once again mechanically retained. Although a discussion with the full participation of the students cannot always and entirely prevent such a mechanical understanding, one can say that the chances of reaching the needs of the students are far greater when the statement of questions (and frequently of solutions) is made by the students.

The counselor chooses, according to this view, to let go of some of the power with which he is granted due to his position. Perhaps not all points will be addressed; perhaps the counselor's preferred way will not be stressed; but there is a greater chance that the discussion will be relevant to the student's current needs, and therefore, the students will be able to be more attentive to solutions presented in the workshop.

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A model of enhancing student support at a distance through mentoring in a cross-cultural context.

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Abstract
Mentoring provides a way of enhancing the quality of education students receive. Australian Aboriginal and Torres Strait Islander students undertaking teacher education course in remote communities are supported by tutors on-site and an academic coordinator who also act as mentors. The cross-cultural-gendered example described for "at risk" students provides a model for the development of effective mentoring relationships. The perceptions of tutors in terms of their roles as tutors vis-a-vis mentors is analysed.

Introduction
A central consideration in higher education reform concerns the quality of education that students receive. A particular emphasis relates to what and how students learn, the effectiveness of university teaching and, hence, student retention and success. Mentoring is a strategy that can facilitate the drive for quality. Indeed, after a review of the literature, Jacobi (1991) concluded that mentoring is a critical component in undergraduate education. Mentoring is considered a crucial factor in retention and success for undergraduate students of colour, particularly women of colour (Terrell & Hassell, 1994). In the area of teacher education mentoring is now the new kid on the block (McIntyre, Hagger & Wilkin, 1993; Caldwell and Carter, 1993). Yet, the potential of mentoring at a distance is largely ignored, particularly with respect to cross-cultural mentoring at a distance.

As part of an ongoing longitudinal study, the paper helps address this area of neglect by focusing on tutor perceptions of the mentoring relationship in a cross-cultural, preservice teacher education, open learning program. The study sought to ascertain the tutors' perceptions of the mentoring relationship between themselves and the students and the lecturers and students, with respect to:
(a)   functions and characteristics of mentoring
(b)   cross-cultural-gender factors; and
(c)   tangible and intangible outcomes of mentoring

The context
James Cook University of North Queensland offers a Diploma of Teaching through the Remote Area Teacher Education Program (RATEP) to Indigenous students on site in widely

spread and small remote communities in Queensland, Australia. RATEP was developed in consultation with Aboriginal and Torres Strait Islander educationalists and community representatives who remain one of the major stakeholders in its financial and pedagogic management. The program is in its fifth year and currently there are 46 RATEP students studying at ten sites. The adult, distance education students are awarded one year's credit towards the three year Diploma of Teaching for the two year Associate Diploma of Education which is also offered off-campus in Indigenous communities by the Technical and Further Education (TAFE) college. RATEP university students complete the same subjects with the same lecturers as on-campus students, except that they are taught through interactive multimedia computer courseware, other electronic technology (audioconferencing, facsimile, and electronic mail) and text with, as on-campus, the support of on-site tutors. The qualification entitles them to teach anywhere in Australia.

RATEP tutors are qualified teachers seconded from the Queensland Department of Education. They are generalists and not traditional university academic content specialists and thus have no formal assessing role. They tutor across the range of subjects taken by the students as well as further develop the students academic literacy and study skills within an English-as-a-second/third-language context. The tutors have a teaching, administrative, and liaising role. Mentoring is not a stipulated component in their job description. Nevertheless, the study reveals that tutors perceive themselves to be mentors. They contend that mentoring is a critical factor in the learning-teaching relationship and outcomes in a cross-cultural context.

Mentoring
Jacobi (1991) highlights a lack of clarity in the conceptualisation of mentoring and its processes, thus leading to confusion as to just what is being measured or offered as an ingredient in success. Nevertheless, there is agreement that mentoring is more than teaching and role modelling. There appear to be certain behaviours involved in a successful mentoring relationship. These can be described dualistically: a caring listener, a critical friend, a trusted counsellor, an accessible guide, a knowledgeable role model, a credible broker, a reflexive teacher, and a warm demander. Mentors are more experienced, possessing greater influence and credibility within a particular profession or organisation than their protege. In effect, mentoring relationships are reciprocal, personal, helping relationships focused on achievement (Jacobi, 1991). They involve "a process of shared adventure...The main thrust of which is collaborative reflection leading to enhanced metacognition, structured to optimise personal challenge" cognitively and affectively (Baird, 1993). These are crucial elements but cross-cultural mentoring acknowledges the additional need to support and promote the learner's cultural identity, values, pedagogy, and ways of thinking and doing whilst simultaneously inducting proteges into the organisation or profession and, in RATEP, Western academia.

From this perspective, mentoring is distinguished from other types of relationships by the mentor's roles and functions. Jacobi (1991) sorted these into three categories. However, there is a need for a finer-grained conceptualisation to account for the complexity of the RATEP context. The data strongly suggests that the functions fall into six categories; (a) psychosocial (that is, emotional, psychological, and financial guidance, support, and counselling); (b) professional development (with respect to the teaching profession and Western academia); (c) (acquisition of) Western academic skills, genres, and ways of thinking and metacognising; (d) role modelling; (e) reciprocity of tangible and intangible benefits; and (f), support for, and sustenance of, the students' cultural identity, values, pedagogy, and ways of thinking. Primary

objectives are emancipation (not from their own culture but from the current effects of colonisation and racist ideologies and practices) and empowerment.

A cross-cultural, open learning, teacher education model of mentoring
Researchers (Hunt & Michael, 1983) have proposed a number of theoretical models of mentoring to achieve an understanding of the dynamics of the mentoring relationship, particularly within different organisational environments. Disappointingly, some of the teacher education literature adopts teacher education paradigms and calls them mentoring models simply by adding the word or concept, *mentoring* (see Maynard & Furlong, 1993). A new or adapted model as shown in Figure 1 is needed for distance education in a cross-cultural teacher education context.

In Figure 1, the base of the pyramid represents the student in the mentoring relationship for the protege is the *raison d'etre* for mentoring. The points on each corner of the base of the pyramid identify possible mentors for the student: the RATEP tutor, RATEP Academic Coordinator/lecturer, other lecturers, and the student's peers. (This study has not examined peer mentoring but acknowledges its viability in mentoring by including it in the model). The sides delineate various relevant facets. One is the (categories of) functions of mentoring whilst
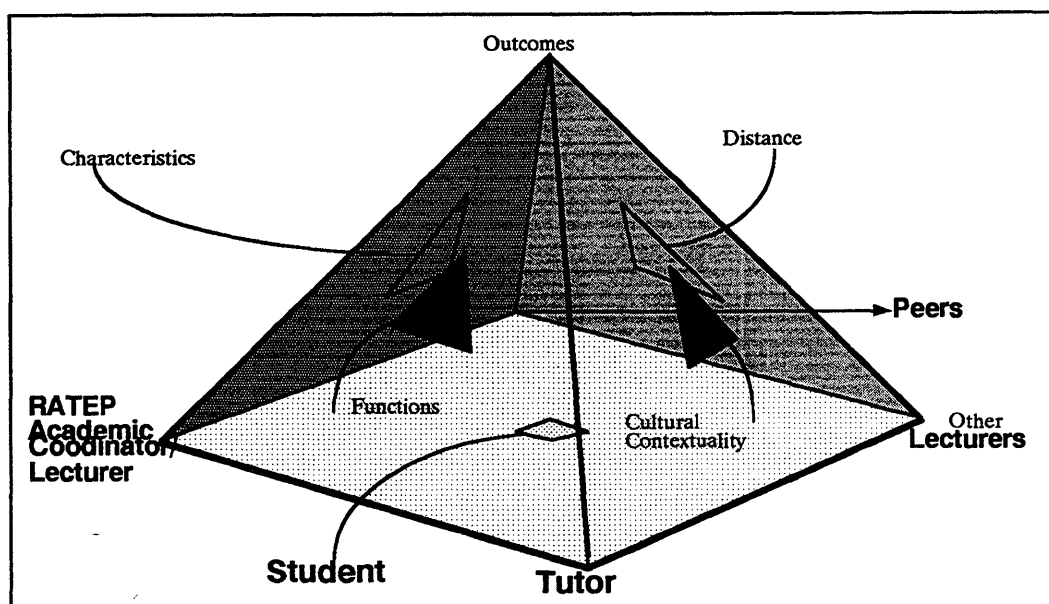

Figure 1: Culturally-contextualised distance education mentoring model

another depicts characteristics of the mentoring relationship. Allocating a third side to cultural contextualisation factors that affect mentoring interactions highlights its significance. This should not be confused with one of six previously mentioned function categories of mentoring: the conscious promotion and sustenance of the student's culture, language, etc. Rather, cultural contextualisation here includes the cross-cultural differences between the student and mentor and the cultural norms that regulate behaviour among the students and how this affects mentoring each student individually and in a group. The fourth side of the pyramid focuses on the important variable, distance, and what this means in terms
of effective mentoring. All the attributes lead appropriately to the apex - the outcomes of the mentoring relationship for each of the stakeholders. Each attribute should be seen as pervading the space within the pyramid and thus influencing all the other attributes in the model.

Method

The study reports the perceptions of five tutors on the mentoring relationship. There was an attempt to have an experiential, cross-cultural and gender balance. There were two female and three male subjects. One of the female tutors is the only current Aboriginal tutor in RATEP; she is from an Aboriginal community close to a large metropolitan city and teaches three female students. All but one of the non-Aboriginal tutors had experience in teaching and/or working with Aborigines and/or Torres Strait Islanders and living in an Indigenous community prior to becoming a RATEP tutor. At any one time, each tutor had from two to seven James Cook University students. (They also concurrently tutored Aboriginal and Torres Strait Islander students at the Associate Diploma of Education level). One of the male tutors had six female and one male student, the second taught three female students whilst the third male tutor had two female students. The other female tutor had six female and five male students. The period of their tutoring experience varied from one to four years. There was a formal induction process for the tutors on campus but the word mentoring was not used although some of the conceptual ideas, roles and functions of a mentor were described.

A structured and open-ended questionnaire was designed and sent to the tutors. Sixty-six items involved the use of a Likert scale. A follow-up open-ended questionnaire based on the tutors' answers to the first questionnaire focused specifically on tutoring and mentoring. It was sent one month after the first questionnaire. None of the tutors took the option of anonymity.

Analysis and discussion

Table 1 shows the results from Likert scale section of the questionnaire that pertained to the tutors' perceptions of interactions with students. The Likert items were categorised into the five different components of the mentoring relationship delineated earlier. (In terms of the sixth component, *cultural contextualisation*, the Likert items were global; for example, "It is not possible to be an effective mentor if you are not from the same culture as the protege". This area was explored in the open ended questions and will be discussed later in the paper). The tutor responses were tallied for the number of Likert items in each category and the percentage calculated. This follows a similar approach by Noe (1988).

Category	Tutor			RATEP Academic Coordinator and Lecturer			Other Lecturers		
	agree	not sure	disagree	agree	not sure	disagree	agree	not sure	disagree
Psycho-social	80%	20%	nil	60%	40%	nil	20%	20%	60%
Professional Development	100%	nil	nil	80%	20%	nil	34%	33%	33%
Academic / Intellectual	93%	7%	nil	80%	20%	nil	60%	nil	40%
Role Model	90%	10%	nil	80%	20%	nil	nil	33%	67%
Benefits to students	100%	nil	nil	80%	20%	nil	33%	11%	56%

Table 1: Percentage of responses concerning mentoring to students

(a)   Functions, roles, and characteristics of mentoring

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(a)   Functions, roles, and characteristics of mentoring

From the high percentages in the "agree" columns, tutors perceive that mentoring plays a strong role in student support. The results show variability across the three groups of academics who could act as mentors.

Taking the tutor group first, they obviously perceive they act as mentors to students in all five categories. This is supported by data from the open-ended questionnaire in which all tutors regarded themselves as mentors and believed the students regarded them as a mentor and confidante for the journey. The *not sure* percentages relate to the wording of the Likert items in which the word *repeatedly* was used. It seemed to suggest daily occurrence rather than the intention of on-going regularity. One tutor had problems with the concept of role modelling. He believed that you cannot be effective "by presuming to be a role model. You constantly provide a model, but it is up to students to decide their own course of action".

The tutors perceived that the students generally saw the RATEP Academic Coordinator, who is also a lecturer, as a mentor even though she was separated by geographical distance. The *not sure* and *disagree* figures can be explained as follows. The RATEP Academic Coordinator did not lecture the student at one site and the tutor was uncertain about the level of involvement with that student. Another tutor commented that her students perceived the coordinator as the person to solve particular problems but they still brokered psychosocial and most academic concerns through her. The tutors believed the coordinator mentored rather than administered or lectured because she was "interested in the students as people and in the important events in their lives"; she did "not blindly teach and have set expectations but was aware of the hidden aspects of the cultures" and, in Baird's (1993) terms, a challenger, cognitively, metacognitively and affectively.

The other lecturers were not strongly perceived as mentors. The tutors felt the lecturers performed as "traditional" academics without taking on the more personal roles of mentoring. One reason for the difference between the academics is that the Academic Coordinator perceives that role as containing pastoral care functions which other lecturers do not necessarily see as legitimate in their role as academic lecturer.

Tutors perceived several crucial differences between mentoring and tutoring in a cross cultural context. They argued that, depending on the student's level of bi-culturality and strength of motivation to completing the course, a tutor could be successful in terms of the student passing subjects and graduating. In such circumstances, the student would relate to that tutor in a functional way where "learning occurs without giving". One tutor elaborated: mentoring is seen as building "a whole atmosphere to success in which both tutor and student take a longer term view and feel part of the whole thing. This leads to greater quality - not just correctness, as with tutoring. Students put more of themselves into activities. They are not just trying to get it right. It becomes part of their existence". This echoes research which argues that Indigenous Australians are holistic learners who are people rather than task oriented.

(b)   Cross-cultural-gender factors
Some of the literature (e.g., Moses, 1989) in discussing mentoring of students of colour argue that cross-race and cross-gender relationships can be effective. Other researchers (Ugbah & Williams, 1989) suggest that the mentor-protege pair should be of the same ethnicity and gender. This study shows that cross-race and cross-race-gender mentoring relationships can be effective, worthwhile and rewarding.

All tutors believe that it is possible to be an effective mentor if you are not of the same culture and gender as the Indigenous student. One reason is that mentoring is seen as a strategy employed by Indigenous people in current-tradition contexts to teach current-traditional content. Thus, when RATEP tutors take on the role of mentor, it is familiar and appreciated by the student/protege. Another perceived ingredient in the success of the cross-mentoring relationship is the realisation by the student that the tutor is genuinely concerned about the effects of colonisation and social injustice. The students see that the mentoring role is one of *generativity*, that is, "a reaching out beyond one's own immediate concerns to embrace the welfare of society and of future generations" (Zanden, 1978). The RATEP mentor thus takes a comprehensive view of their role as opposed to seeing themselves as just buddies or tutors or guilt-ridden "do-gooders".

The cross-cultural context is more complex than usually described in mentoring literature. For instance, in one RATEP centre, one of the Aboriginal students is in a "poison aunty" relationship with the other two female students. Traditionally speaking, there should be no direct communication with the aunty. While they are studying the students have made allowances but these do not extend to asking assistance from or offering it to the aunty. Obviously, Indigenous traditions of behaviour have implications for effective mentoring. The mentor not just understands but values cultural norms and works within the parameters adopted by the students.

(c)   tangible and intangible outcomes of mentoring

	From Students			From the RATEP Academic Coordinator			From other Lecturers			From other Tutors		
	Agree	Not sure	Dis-agree	Agree	Not sure	Dis-agree	Agree	Not sure	Dis-agree	Agree	Not sure	Dis-agree
Benefits to tutors	100%	nil	nil	87%	nil	13%	33%	20%	47%	73%	7%	20%

Table 2: Percentage of responses concerning benefits to tutors

From the benefits component in Tables 1 and 2, it is evident that mentoring is a reciprocal relationship for both tutors and students. Not surprisingly, there are fewer instances of benefits deriving from the students' and tutors' relationships with the Academic Coordinator and other lecturers. The colleageality among tutors highlights the importance of networking as a variable in mentoring, particularly when distance is involved. For all parties, the benefits are emotional or tangible.

Outcomes for students include lasting friendships, mastery of academic genres and ways of thinking, autonomy as learners, professionalism, greater realisation of their capabilities and ability to achieve, graduation, and empowerment. They have become more adept at questioning the system they are part of and using the system to achieve cultural goals. There is also the awareness that their graduation is seen by their communities as an important step in lessening the control of, and dependence on, non-Indigenous teachers. Tutors report greater understanding in cross-cultural teaching and living, an improved ability to negotiate, mediate and motivate, greater understanding of adult, English-as-a-second-language learning styles, being accepted as an extended member of the student's family, enrichment, and, for two tutors, career opportunities have opened up due to the intervention of the RATEP Academic Coordinator.

Conclusion

A model has been put forward to enable an effective mentoring program to be delivered at a distance in a cross-cultural-gendered context. The use of on-site tutors for "at risk" students is a useful and effective strategy. Contrary to some of the literature, the study reveals that cross-cultural-gendered mentoring works. In addition, there are clearly reciprocal benefits for students and mentors. Further research is required into the question of more inservice training in the processes and strategies of mentoring cross-culturally.

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SECOND LANGUAGE ACADEMIC READING IN DISTANCE LEARNING:
A LEARNER CENTRED APPROACH

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INTRODUCTION

Perhaps more than any other curriculum area, second language learning, and reading comprehension in particular, have had an uneasy relationship with distance learning (DL). The temptation to associate language learning with classroom instruction has remained strong.

The object of this paper is to argue against this one-sided position and support the claim that L2 reading1 instruction is a good case for treatment in a distance delivery mode.

I attempt to relate the relevance of DL factors in general to its particular use in L2 reading in order to establish that DL is not an inferior but rather an appropriate mode of instruction for L2 reading comprehension1. I shall do this by identifying a set of features common to both which could explain why this delivery system appears to be particularly well-suited for learning how to read L2 academic texts.

THE NEED FOR L2 READING PROGRAMMES IN DISTANCE LEARNING

The closer we come to Mc Luhan's prophecy of a global village, the more we recognise the intense need for international communication skills. As English has become the accepted international language, so has the range of its operations spread, and so has the demand for communicative skills in English as a foreign language (EFL) increased. Beyond the growing need for oral skills in English (speaking and listening), a large section of the adult population also requires reading competence in general and/or in their specific field of work or study. Hence the rapid development of ELT (English language teaching) programmes in EFL and ESP (English for Specific Purposes) which have sprung up in the various sectors of teaching establishments.

Many mature individuals who need to develop their communicative skills in English, because of social, professional or family commitments, are unable to attend regular universities or colleges and therefore welcome alternative learning opportunities. As a result, the availability of educational services for adults in a variety of systems has been extended, from regular university courses and language schools to extra-mural courses, extension programmes, correspondence courses, distance learning programmes, etc. (Holmberg, 1988). DL systems offer a number of advantages over the more traditional institutions. With their more flexible entrance requirements, they allow for the democratization of education, extending educational opportunities to all sections of society, breaching geographical, temporal and also psychological barriers (Baath, 1980). They offer educational opportunities, open broad and widespread impartment of knowledge, and contribute to the reduction of the social divide.

The challenge taken up by DL is to provide an educational experience that achieves parity with conventional methods in quality, quantity and status. This can only be attempted by developing a satisfactory theoretical structure linked to an informed analysis of good distance education (DE) practice. One problem that faces all distance programmes is determining the most efficient teaching/learning system (Richards, 1994).

READING IN DISTANCE LEARNING

In spite of the lack of research to prove this point, DL appears to be a useful and acceptable system for English academic reading instruction at the tertiary level. The results in the reading courses presently offered at the Open University of Israel prove this point and show that students taking the same course in a DL mode or in a classroom learning (CL) mode can do equally well. The puzzling question is: "Why?" If the quality in classroom instruction is good, are there particular factors in distance instruction which could account for the fact that CL, which involves regular meetings with teachers and peers, does not generate better results than DL? Is there something specific in the nature of Reading as a context of language use that makes it a particularly appropriate subject to be taught in the context of distance instruction? Are there favourable conditions in DL that make reading instruction a suitable subject for treatment in that mode?

In my attempt to address these questions, I related these two separate levels of abstraction, Reading and DL, and tried to establish certain compatibilities that might exist between the two. My contention was that through a theoretical analysis of the principles of L2 reading and its relation to DL, one could probably arrive at a conceptual explanation for the fact that distance learners do well in L2 academic reading instruction. I tried to identify some of the specific features that are characteristic of a distance delivery mode and looked at the differences between the learner mediated conditions of DL and the teacher mediated conditions that are characteristic of CL. When contrasted against the background of reading instruction in the classroom, some features specific to DL became apparent.

* DL approximates closely reading because of the temporal and spatial gap between addresser and adressee. Discourse in both cases is enacted at a distance.
* DL provides a more authentic setting for reading instruction because both, the context of language use and the context of language instruction, imply non-reciprocal interactions.
* DL and reading imply a disassociated first person within an interactive context, and thus provides a good setting for teaching communication within the context of another mode of communication.
* DL provides a platform for language use that echoes the context of authentic reading. Both require private interactions with the discourse.
* Reading is an independent activity and DL by definition requires independence.
* The notion of self-regulation in DL is consistent with the regulation of discourse authentication in reading. Both are learner/reader-driven and self-mediated.
* DE provides optimal self-directed learning conditions wherein learning and reading procedures are always activated and monitored by the intended receiver of the written message.
* Reading time in real life reading situations and learning time in a learning to read setting are reader and learner dependent. In both cases, reader and learner are responsible for adjustments in the procedures.

CONVENTIONAL ATTITUDES TOWARDS SECOND LANGUAGE READING

Traditionally, the control of literacy development has been attributed to the teacher's regulation of the learning process in the classroom (Walandouw and Penrose, 1994). As a result, there has been an underlying assumption that teacher or `expert' mediated instruction is likely to produce better results. However, with the acceptance of cognitive psychology learning theories, the belief that language learning could only take place in the classroom was challenged (Sulzby and Teale, 1991). In Second Language Acquisition (SLA) however, in spite of a growing tendency towards a communicative approach, most formal language learning still takes place in the classroom where the instruction is teacher-mediated. This conservative trend might have been perpetuated on the grounds that self-study is learner-mediated and that students who are not `experts' may not be able to carry out the responsibility for monitoring learning procedures. It follows from this argument that the classroom is predominantly considered to be a more authentic social setting for language instruction. This point of view seems well-founded, particularly for the acquisition of L2 oral communicative skills, listening and speaking. Indeed, a CL setting, where students and teacher interact, offers a good substitute for real-life social interactions, especially when learning a foreign language in a non-immersion context.

Reading is also language communication but of a different nature. It is an interaction between a writer (the sender of the message) and the reader (the receiver of the message) through a piece of written discourse. In a spoken interaction, the text is simultaneous, transitory and leaves no trace unless recorded. In a written text on the other hand, the interaction is asyncronised, indirect and the addressor's contribution has been recorded; the addressee has to then interpret this text and derive discourse form it. As a result, the convergence in written communication is less straight-forward than in spoken discourse. The addressee's understanding derived from a text is more open to negotiation and the authentication process more subtle (Widdowson, 1994).

Since most instructional materials in DL are in print, the learning context in which the interaction between the student and the teaching context occurs replicates in some ways the interaction of the reader with the discourse in a reading context.

DISTANCE VERSUS CLASSROOM INSTRUCTION

Reading is by definition a private, solitary activity that involves intercourse between a reader and a writer through the written text. Thus, a more authentic setting for reading is within the reader himself and his private interaction with the discourse. Bringing such a private solitary activity into a socially interactive classroom setting might therefore almost be perceived as an anomaly.

DL, like Reading, takes place within the learner's privacy and requires the same kind of mental operations as reading does. The learner works on his own, builds his own pacing and controls the procedures of remediation. He takes responsibility for determining the amount and rate of learning as well as the amount of time on task. One could therefore argue that teaching reading to adults in a distance mode appears to provide a naturalistic setting which approximates more closely a real-life reading environment. In other words, a DL setting appears to be more authentic for teaching reading, since both, the learning procedures and the

reading procedures, are mediated by the addressee (the student in the learning context and the reader in the reading context).

CL has the advantage of providing a platform for reciprocal interactions, but more often than not, the teacher rather than the learner, is the dominant figure in this interaction. In addition, since classes are usually large, not every student has the opportunity to participate in the interaction. DL is conducive to non-reciprocal interaction, which is perceived as a disadvantage, but each learner is the dominant figure in the interaction in the sense that he is the more active party in the learning/reading operations. In other words, since it is the student who is responsible for the learning experience, he benefits from having to function in a learner centred environment which is conducive to independence. Moreover, critics of distance education who disapprove of these learning systems for their lack of reciprocal interactions can now have their fear appeased and their arguments somehow refuted thanks to the growing availability of e-mail and internet technologies which enable students to communicate with their tutors and with each other.

From the literature in Reading we know that literacy is multi-dimensional and that there are probably as many literacies as there are people. In the classroom, it is the teachers' channel of literacy and his/her interpretation of a written text that will dominate the learners' comprehension of that text. In contrast, the student in DL reads and learns by utilizing his own literacy channel. Although the distance instructional materials are written with a common literacy factor in the mind of the distance syllabus writer, the learning procedures are individualized since every learner operates according to his own time, speed, pace, response and motivation. Furthermore, if the pre-constructed instructional materials include metacomprehension questions that focus on the cognitive processes and the reading procedures, the student will have a chance to develop his meta-awareness of his own learning/reading procedures. A learner's purposeful control over his own reading and learning processes is likely to correspond with his own particular educational and affective needs. Since the sense of responsibility is greater, this might generate further motivation to read, and also better achievements.

We know that students who choose to study in a DL system have a motivational drive which is different from that of traditional classroom students (Knowles, 1975) and that this drive has some bearings on learning outcomes (Schwittman, 1982; Spence, 1983). The literature also emphasizes the role of the learner who represents the most important motivational force in the learning experience (Wlodkowsky, 1991; Walberg and Uguroglu, 1980). Although the instructional materials are planned and preset by the syllabus writer, the monitoring of the learning is totally dependent on the learner (Wittrock, 1986). He functions in an environment which forces him to manipulate the prescribed learning variables on his own, according to his needs. Similarly in the reading act, whether in a real reading context or an instructional one, it is the reader/learner himself who is most aware and hence best able to control appropriately his own reading procedures. DL seems to provide a platform in which the intentions of the writer or the pedagogical intentions of the syllabus writer remain intact until the individual student is ready to initiate and control the reading/learning experience. Only he is able to activate and manipulate the materials, independently and according to his own particular requirements. In other words, DL generates optimal self-directed learning conditions and is therefore more conducive to the learner's autonomy, one of the essential pre-requisites in andragogy (Knowles 1984, 1978). Since most adults are accustomed to relatively high level of responsibilities, it would also seem logical to extend this sense of responsibility to their learning.

Another factor in favour of DL systems is the traditional individualized written feedback, one of the most accepted forms of tutor's response to students'work. Although lengthy, written feedback provides an individual response to each particular learner at a time. They address a particular learner's problems and attempt to deal with his specific weaknesses, thus focusing more on process than product. The classroom teacher usually responds to the most common problems experienced by the majority of students, but is rarely able to deal with each individual learner. I would therefore argue that even the feedback systems in DL are more likely to provide the learner with individual and personalized information about his own learning.

INSTRUCTIONAL MATERIALS: A LEARNER CENTRED APPROACH

DL programmes rely entirely on pre-defined and pre-produced learning materials which are predominantly syllabus-writer led, since at the conception and development stage, it is him/her who assumes control of the selection and the organisation of the reading texts and the tasks. The way a learner interacts with the syllabus is a function of how the syllabus has been methodologically mediated in the course of instruction. In CL, the pedagogic practice is such that the teacher motions an abstract syllabus into what he considers to be the most appropriate mediation with the intention of activating the learning process. It is thus the teacher rather than the learner who controls and promotes the learning. In DL, on the other hand, the instructional process is made operational by the learner who mediates and manages his own learning through a set of bearings clearly outlined in the syllabus. However, because the presentation of the instructional content is fixed in advance, one could argue that a frozen syllabus does not allow for sufficient spontaneous and unpremeditated learners' actions or responses. Indeed, an all embracing, rigid course structure may inhibit independent student manoeuvring of learning procedures and hinder the monitoring of progress.

Since freedom for manoeuvre is a central feature of DL and represents an essential component of a communicative and learner centred approach, how does one reconcile the principles of pre-specification on the one hand with the principles of freedom for manoeuvre for learning on the other? How does one achieve an appropriate balance between rigidity and flexibility, and between autocracy and autonomy? The answer can only be found in a bifocal approach which is syllabus-writer led but learner centred. This requires materials which are organised around the learners'assumed enabling behaviours as well as possible learning preferences (Hughes, 1983).

As a result, guidance and choices are needed. Such an approach offers the advantage of providing support in the course of the learning process and lends itself to respecting the autonomy of the students who can select their own study objectives and work according to their own pace. Effective student decision-making requires the development of a larger base of options from which the learner can select one option over another and articulate to himself, metacognitively, the rationale of the relative merits of pursuing a particular option. Therefore guidelines and activities which promote the integration of language and subject knowledge as well as decision-making abilities implicated in the interpretation of texts are a must in a learner centred approach.

However, since language use cannot be predicted in advance, the kind of pre-packaging of language that is implicit in an exclusively objective oriented model must be rejected. Only the

minimal artificial pre-selection or arrangement of language items should be done when planning a syllabus which would allow for maximum behavioural adaptiveness and flexibility. In order to develop natural language growth and prepare the student for non-planned communication, the linguistic content must be subordinate to the learning process and the pedagogical procedures. This type of syllabus, unlike many course designs which are language based, is influenced by views on the way one learns a language. As a result, certain inadequacies which exist in traditional language teaching can be more easily rectified in DL. I refer in particular to a view of reading that over-emphasises textual clues and linguistic features at the expense of the social aspect of communication. In relation to the critical view of linguistic models of reading, I believe that DL in particular is characterized by natural social conditions that provide a conceptual validity for repairing the narrow approach of such models.

SOME OF THE ADVANTAGES OF DISTANCE LEARNING

Reading and DL share a number of common principles which make them appear particularly well-suited bed-fellows. Moreover, DL is a learning system which seems very appropriate for L2 reading instruction.

* DL is flexible in terms of its adaptability to students' conditions in time and in space.
* DL provides a suitable platform for independent learning since it is the student who is responsible and becomes the deciding factor for when, where and how the learning is to take place (Knowles, 1975; Mezirow, 1981).
* DL is conducive to the adult learner using his maturity and applying his past experiences, knowledge and behaviours to new teaching/learning frameworks.
* DL enables the learner to address his specific strengths and weaknesses and to adopt practices that will promote reading achievements. By directing his own study time and by pacing the workload, the learner raises his consciousness about his own learning needs much more intensively than a teacher can help him do in a class setting.
* DL provides a setting for language use that echoes the context of authentic reading wherein the learner/reader functions in a solitary fashion according to his own particular needs.
* Discourse in both cases is enacted at a distance, and the implications of non-reciprocity are manifested in the spatial and temporal separation in the condtions of production of materials as well as in the conditions of reception.
* Both, DL and reading, imply a disassociated first person within an interactive context.
* The notion of self-regulation is consistent with the regulation of discourse in the sense that they are both a reflection of a transferable general strategy.

CONCLUSION

By looking at the positive conditions of DL, as opposed to focusing on what would appear to be defective constraints, I believe that we can turn to our advantage the circumstances of teaching reading at a distance. By using distance devices and applying them to the teaching of L2 Reading to adults, one can exploit the conditions of that mode of instruction, and maximize the learning potential within that system.

I believe that DE provides an ideal instructional context for reading because it is learner centred and it offers a platform which maximises the potential for freedom of manoeuvre. Even more so than in the classroom learning mode, the content of a distance learning syllabus is only what the subject taught means to each particular learner and what each student interacting on his own with the materials brings to, makes of and wants from the subject.

The general guiding framework is that a DL syllabus allows for the learner's initiative, that the selection and grading of the language content is done in terms of learning relevancy and that negotiation rather than prescription is at the heart of the procedures. However, for all those convinced of the appropriateness of DL for adults, because of its learner centred characteristics, it is important to note that the flexibility DL is able to provide can only be applied within the constraints of the boundaries created by the distance teaching organization (Delling, 1987).

Note
*   Second language academic reading or L2 reading comprehension refer to non-native speakers' acquisition of English reading skills that will enable them to access academic texts in English in the content area of their studies.

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Title: The learner in control: another perspective of this illusive ideal.

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INTRODUCTION

A key feature of current approaches to open and distance learning (ODL) is the emphasis being placed on adult learners assuming a greater initiating role in the teaching-learning enterprise. Concepts such as *dialogue* (Evans and Nation, 1989) and *collaborative learning* (Kaye, 1992) that have emerged in the ODL literature within recent times are based on a commitment to the reduction of learner subordination and to the development of an environment that facilitates learner engagement with teaching agents in a relationship of greater equity. For such a relationship to be developed and maintained, it is evident that certain qualities will be required of both the learner and the teaching system. As far as the learner is concerned, advocates of ODL argue that attention should be placed on the developemnt of an individual who has both the ability and the willingness to make decisions about and give direction to the learning process.

In addressing this issue, Garrison and Baynton (1987) put forward the model of learner control which they regard as being a critical dimension of teacher-learner interaction in any educational transaction. They argue against an exclusive focus on learner independence and propose instead the concept of control to embody the three components of independence, power and support, all of which they define (pp. 6-7). They contend that "to be fully in control of the learning process, the student must have the freedom to explore possible learning objectives, the power to handle a learning activity and the support necessary to complete the educational experience" (p.9). (See also Baynton, 1992).

There is need to continue the investigation into the capability and willingness of the adult learner to assume positions of responsibility in the teaching-learning enterprise. In doing so, there is also need to recognize that the current environment of further and higher education, with its long history of institutional control and top-down relationships, can militate against the emergence of a more autonomous learner. Of additional significance is the point that Mason (1994) makes about the legacy of passivity that adult learners bring from their past educational experiences.

Consequently, given the reality that, in many instances, the development of ODL will of necessity involve a transformation of current modes of operation in further and higher education, I consider it important that this issue of learner control should also be examined within the context of a traditional adult learning environment, with a view to assessing the potential of factors within that environment for influencing the attainment of this goal. This paper reports on a research study aimed at addressing this issue, with specific reference to factors related to learner attitude and behavior.

THE SURVEY: ADULT LEARNERS' VIEWS ABOUT THEIR LEARNING.

Survey Design

As part of a research program on interaction for learning, an exploratory survey was carried out to get a sense of adult learners' perceptions of their behaviors and attitudes in the learning process. The survey comprised a questionnaire with follow-up interviews. Two of the subtests of the questionnaire addressed issues related to patterns of teacher-learner communication and learners' perception of their capability to manage their own learning

respectively. These two subtests were considered complementary for the purpose of this paper.

In the case of teacher-learner communication, the subtest entitled <u>Talking with lecturers</u> was designed, based on the principle embodied in the concept of *dialogue* (see earlier reference) that there should be greater symmetry in the relationship between teachers and learners and that these two sets of participants should occupy both reactive and proactive roles in their communication with each other. This subtest was aimed at determining the extent to which learners saw themselves as occupying each of these roles.

Thus there were two categories of items. An example of an item in the 'reactive' category was 'You ask lecturers to clarify a point', and an example of the 'proactive' category was 'You re-focus a discussion involving students and a lecturer which you find is drifting'. There were 14 items each with a 5-point rating scale ranging from 'very often' (5) to 'never' (1).

Learners' perceptions of their behaviors and attitudes in the learning process were addressed in the subtest <u>Taking responsibility for your learning</u> which comprised both closed and open-ended items. The entire subtest was designed to reflect the three dimensions of Garrison and Baynton's model of learner control. The closed items were all aimed at identifying the extent to which learners saw themselves as being capable of engaging in independent learner activity. Instruction for this set of items acknowledged that the tasks listed may or may not have been part of the learners' prior or current learning experience. However they were asked to use their knowledge of themselves as learners to indicate how far they saw themselves as being capable of undertaking the tasks identified. Examples of items were 'Given a topic and a broad course outline, (you can) set your own objectives' and '(You can) negotiate methods of assessment on a one-to-one basis with a lecturer'. There were 12 items, each with a 5-point rating scale ranging from 'capable' (5) to 'definitely not capable' (1).

As stated above there were also four open-ended items. Two of these required respondents to list three personal strengths and limitations which they felt helped or hindered their ability to manage their learning respectively. These two items were aimed at addressing the area of personal power. The other two each asked for three factors outside of the self that facilitated or hindered students' learning. These latter two items were seen as dealing with the dimension of support. The decision to sollicit responses of both a facilitating and restricting nature for each of the two dimensions was based on the view that one needs to recognize these opposing attributes in order to be optimally aware of the potential of the two dimensions.

The questionnaire was subject to peer review and changes were made based on recommendations received.

Sample

The survey was conducted among secondary school teachers pursuing an in-service postgraduate diploma of education program at The University of the West Indies, Trinidad and Tobago, W.I. This diploma program is organized in such a way that, during the school-term, student-teachers attend classes one day per week. During the vacation, full-time attendance is required for specific periods of time. Thus the program begins with a 4-week period of intensive study during the July-August vacation. There is also a one-week period to coincide with the Christmas and Easter vacations respectively.

There were 106 students enrolled in the 1994-95 program and 75 completed questionnaires were returned. This represented 71% of the sample. The majority of respondents were within the age range 25 to 45 years. Fifty six percent (56%) fell within the 25-35 bracket and 25% were between 36 and 45 years old. There were 61% women and 31% men. Eight percent (8%) did not indicate their gender.

Ninety two percent (92%) had attained a bachelor's degree. Within the three-year period preceding entry into the diploma of education program, 39% were involved in some form of study while 58% were not. The 75 respondents were specializing in eight curriculum areas with the highest concentrations in English (19%), Mathematics (19%), Science (15%) and Social Studies (13%).

This sample was considered representative of a significant sector of mature students in higher education in the context studied.

Method

The questionnaire was administered directly to students towards the end of the 4-week period of full-time intensive study described earlier. Follow-up interviews were conducted with a small group of volunteers.

Data Analysis

Subtest I: Talking with lecturers

The reliability of this subtest, using the Cronbach Alpha model, was estimated to be .79.

The results of this test indicated that respondents engaged more frequently in reactive than in proactive communication with their lecturers. The mean on the items representing reactive communication was 3.33 with a standard deviation of .48. The mean for proactive communication was 2.41 with a standard deviation of .52.

A distinct pattern was evident in the responses to each of the two types of communication. The number of respondents selecting the 'very often' rating for the reactive group of items was noticeably larger than the number selecting the same rating for the proactive group of items. At the other end of the scale, the pattern was reversed with more respondents opting for the 'never' rating for proactive communication.

For example, approximately 11% gave a 'very often' rating for the item 'You answer questions that lecturers ask' while 3% gave this item a 'never' rating. On the other hand, only about 1% gave the highest rating to the item 'In a group setting you openly disagree with lecturers' views on some aspect of the course' with 12% recording a 'never' rating for this item.

On the whole though, the majority of respondents tended towards the 'sometimes' rating for both groups of items (Table 1).

Table 1: Frequency Distribution for select items of subtest, <u>Talking with lecturers.</u> (percentages only).

ITEM CATEGORY	ITEM	RATING SCALE					
		Very often	**Often**	**Some times**	**Rarely**	**Never**	**N o Resp**
REACTIVE	You support a point made by lecturer.	6.7	24.0	57.3	12.0	-	-
	You answer questions that lecturers ask.	10.7	30.7	48.0	8.0	2.7	-
PROACTIVE	In a group setting you openly disagree with lecturers' views on some aspect of the course.	1.3	6.7	46.7	33.3	12.0	-
	With other students you recommend changes to the programme of study.	1.3	21.3	40.0	22.7	14.7	-

n = 75.

Subtest II: Taking responsibility for your learning

The reliability of the closed-item section of this subtest was estimated to be .92. It is evident that in responding to the closed items segment, students rated themselves very highly on virtually all aspects of independent learning activity. The mean on these items was 4.00 with a standard deviation of .82. When the 'fairly capable' and 'capable' categories of responses are combined, this pattern emerges for the following items:

Sixty five percent (65%) response in these two ratings combined for the item '(You can) set your own objectives, once given a topic and course outline';

Eighty five percent (85%) for '(You can) draw up a study program with the support of a lecturer';

Sixty eight percent (68%) for '(You can) decide how you want to be assessed' (Table 2).

Table 2: **Frequency Distribution for select items of subtest Taking responsibility for your learning (percentages only).**

ITEM	RATING SCALE					
	Capable	Fairly Capable	Only just capable	Not capable	Def. not capable	No resp
Given a topic and course outline, (you can) set your own objectives.	30.7	34.7	25.3	4.0	4.0	1.3
(You can) draw up a study programme with the support of a lecturer.	40.0	45.3	6.7	5.3	1.3	1.3
(You can) decide how you want to be assessed.	34.7	33.3	17.3	9.3	1.3	4.0
(You can) assume full responsibility for scheduling your study time.	52.0	30.7	9.3	2.7	2.7	2.7

n = 75.

An examination of each of the two sets of open-ended questions revealed that responses given as personal strengths or facilitating factors on the one hand were basically of the same type as the corresponding responses entered as personal limitations or external hindering factors. Consequently the same headings were used to categorize entries to each of the two sets of items.

Personal Strengths and Limitations

As mentioned earlier, students were required to list three strengths and three limitations in response to two separate questions. Thus, for the entire sample of 75 respondents, there was a total expected tally of 225 responses for each of these two questions.

Responses given were grouped, using the same category headings for both strengths and limitations. Eight categories were created, the largest being intellectual skills and abilities, self-discipline qualities, and ability to organize one's learning activities (Table 3). The first two will be described here.

Table 3:   **Categories of responses for personal strengths and limitations.**

CATEGORY	PERSONAL STRENGTHS		PERSONAL LIMITATIONS	
	No. of Resp.	% of Total Responses	No. of Resp.	% of Total Responses.
Intellectual Skills, Abilities	39	17.33	15	6.67
Ability to manage learning	37	16.44	36	16.00
Self-discipline qualities	50	22.22	19	8.44
Self-motivation, self-confidence	11	4.89	7	3.11
Personal aspirations, attitudes to learning	25	11.11	9	4.00
Emotional, Spiritual Strengths or Limitations	7	3.11	4	1.78
Experience/Age	3	1.33	1	0.44
Physical Condition	-	-	4	1.78
Invalid Response	25	11.11	78	34.67
No Response	28	12.44	52	23.11
Total	**225**	**100%**	**225**	**100%**

Intellectual skills: The 39 responses entered as personal strengths in this category represented 17% of the total responses for the relevant question and the 15 entered as personal limitations represented 7%. Out of the 39 intellectual skills categorized as personal strengths, there were 15 that can be described as being of the acquisition,storage and retrieval type. Examples of these were 'ability to organise and retain', 'ability to recall easily', 'capacity to read and understand'. Out of the 15 skills categorized as personal limitations, there were five of this type, an example of which was 'difficulties in undertanding certain reading materials'. It is worth noting that four of the five limitations in this sub-group of skills were in the area of reading.

'Analytic ability' was cited as a strength five times. There was one reference to 'concentration' as a strength and five as a limitation. Synthesis skills were cited as a strength four times, for example 'I relate apparently unconnected material' and as a limitation once, namely, 'I fail to link subject matter with real life'. Other entries reflecting a higher level of intellectual activity included 'open to new ideas' (strength) and 'not to be able to trash out areas of difficulty as they arise' (limitation).

<u>Self-discipline qualities:</u> The 50 responses entered as personal strengths represented 22% of the total expected responses for the relevant question and the 19 entered as limitations, 8%. Very evident in the 50 personal strengths in this category was the use of stock expressions. Variations of the terms 'persistent' and 'persevere' appeared 9 times; there were 7 instances of 'determination', 8 of 'discipline' 3 of 'hardwork'. Other terms used were 'stick-to-it-iveness', 'endurance' and 'commitment'. On the other hand, within the 16 personal limitations of this category, there was greater use of more descriptive and explanatory language such as 'involved in many activities', 'not wishing to lose control of other aspects of my life' and 'having just begun and having not studied for several years, need time to get back to intense discipline which studying requires'.

<u>Invalid responses entered as personal strengths/limitations:</u> The 25 invalid responses entered as personal strengths accounted for 11% of the total expected responses for that question and the 78 entered as personal limitations accounted for 35%. While this group of responses was not established as one of the eight categories referred to earlier, it is worth noting that invalid responses entered as limitations represented the highest single group of responses for this question.

These responses were considered inappropriate for the two questions posed since they tended to be more representative of factors outside the person rather than of attributes within the person. Examples of such responses entered as personal strengths were 'lecturers', 'guidance on topics with lecturer', 'support from wife'. Examples entered as limitations were 'family commitments', 'distance between home and campus', 'not having relevant material' and 'too many perspectives, but not direction'.

External factors facilitating/hindering learning

Students were required to identify three facilitating and three hindering external factors for each of two questions. Thus, as was the case with the questions on personal strengths and limitations, there was a total of 225 expected responses for each of these questions.

Responses were grouped into 10 categories and the same categories applied for both facilitating and hindering factors. Family life and institution-related factors emerged as the dominant ones (Table 4). The second of these two will be described here.

Table 4: **Categories of responses for external facilitating and hindering factors.**

CATEGORY	FACILITATING FACTORS		HINDERING FACTORS	
	No. of Resp.	% of Total Responses	No. of Resp.	% of Total Responses.
Family-related factors	43	19.11	34	15.11
Institution-related factors	46	20.44	38	16.89
Relationship with fellow students	14	6.22	2	0.89
Environment (home, institution)	19	8.44	10	4.44
Distance, Time, Job responsibilities	11	4.89	37	16.44
Role, influence of acquaintances	22	9.78	8	3.56
Personal financial situation	-	-	12	5.33
Rewards	3	1.33	1	0.44
Effect of socio-cultural factors	3	1.33	8	3.56
Religion	4	1.78	-	-
Invalid Response	9	4.00	9	4.00
No response	51	22.67	66	29.33
Total	**225**	**100%**	**225**	**100%**

Institution-related factors: These included the role and function of the lecturer, access to (non-human) resources, administrative factors, and the structure and delivery of the program of study. In relation to the lecturer, respondents found that 'listening to the lecturer' and lecturers who offered 'proper guidance and tutorship' were facilitating factors. 'Lecturers who are unclear' was regarded as a hindering factor.

The follow-up interviews provided more detail on this issue of desired lecturer-roles. In response to a question about learner expectations of lecturers, there was overall preference for a lecturer performing a very directive, information-transmission function. For example, two interviewees made the following comments:

> *I expect them to be able to explain the subject matter. Usually the text is not very clear. What you are looking for is simplification of things... I find that it (the lecture) provides a guide to me because some of the terms I might not understand*

and would find the explanation in the lecture... Basically the lecturer tends to point the student in the direction that is expected. This is what I look for.

As a student I expect him (the lecturer) to give me relevant information to whatever topic they may be discussing, concrete guidance as to exactly what they expect of me.

Preference for structure and directiveness was also evident in respondents' views on the strengths and limitations of the study program. They noted the benefits of 'clear concise information', 'rundown on examination questions, format etc.' and the disadvantages of 'not being clear on assignments' and 'lack of proper directions'.

Relationship between teacher-learner communication and perception of learner control.

When the subtests are examined in relation to each other, the two do not appear to be complementary. On the one hand, very few students considered that they frequently engaged in proactive communication with their teachers. Indeed, many preferred to be more cautious about their claims in this regard, settling for a 'sometimes' or even 'rarely' response. On the other hand a large proportion saw themselves as being fairly capable or capable of undertaking independent learner activity. Thus this study does not appear to have generated data that suggest the possibility of a relationship between proactive communicative behavior and the independence component of learner control.

Discussion

Based on the results of the subtest, Talking with lecturers, it would appear that relationships between teachers and learners tend to be more assymetrical than symmetrical. However there is also evidence that a large proportion of students gave themselves a 'sometimes' rating for both reactive and proactive communication. It is therefore possible to infer from this that a fairly substantial number of this group cautiously consider themselves as engaging in both reactive and proactive modes of communication. This pattern bears some similarity to the ideal embodied in the notion of *dialogue,* the proponents of which advocate that teachers and students alike must occupy both reactive and proactive roles (Evans and Nation, 1989). Garrison and Baynton share this perspective and contend further that "who initiates the communication is an important issue since this individual is in a more advantageous position to control the educational transaction" (p.11). It is my view that this likely ability to switch from one mode to the other, however tentatively acknowledged, holds important implications for the development of learners who are able to take a greater initiating role in their learning. At the same time, one needs to be careful not to entertain expectations that exceed learners' willingness and capability to initiate communication.

Data generated in the subtest, Taking responsibility for your learning support the three-dimensional nature of Garrison and Baynton's model of learner control. In particular attributes of power (personal strengths and limitations) and support (external facilitating and hindering factors) outlined by the students themselves, parallel those presented in the original model. Notwithstanding this overall similarity, there are two factors which raise questions about the model in the context of this group of learners.

First, it is unlikely that the preferred role of the lecturer as identified by some members of the group can adequately serve as a support for learner control. Garrison and Baynton caution against the type of human support that "manages, controls and directs the interaction" (p.8), inferring that it can diminish learner control. What is evident here, whether in the open-ended questions or in the follow-up interviews, is a situation where at least some learners are articulating a need for a lecturer-figure that manages, directs and controls.

Secondly, there is the issue of balance among the three dimensions. Garrison and Baynton state that "for the student to have full control over the learning situation, there must be a dynamic balance between independence, power and support" (p.9). Based on the survey data, one notices that a large proportion of students credited themselves with a high level of capability to be independent learners. On the other hand, one wonders whether the attributes of personal power and the examples of external support factors are sufficiently appropriate to complement the level of independence for which students deemed themselves capable.

In terms of intellectual skills, although there is some awareness of the role of higher order mental activity, there is a heavy focus on skills at the lower end of the cognitive hierarchy. It is doubtful whether these skills can be relied on to facilitate the level of independence inherent in the tasks listed in the closed items section of this subtest.

The heavy use of stereotypical terms to identify qualities of self-discipline also deserves some attention. While acknowledging the value of these qualities in any formal learning environment, it is my view that, in the context of conventional formal education, these qualities are more a reflection of doggedness and passivity than of creativity and boldness. Indeed the reason for their popularity as a response to a question on personal strengths may lie in the perception that they are highly valued within the prevailing institution-controlled culture of formal education. Thus the question that arises is: To what extent are moral qualities like 'persistence', 'determination' and 'stick-to-it-iveness' sufficient in themselves to complement learner independence?

Of special interest is the high proportion of responses entered as personal strengths and limitations that should more appropriately have been entered as external factors. Given the frequency of this type of inappropriate response, it is evident that some students were either unwilling or incapable of identifying and examining attributes internal to themselves. What is of some concern is the apparent automatic manner in which these students located personal responsibility in elements outside of the person. Of even greater concern is the fact that this displacement of the self by the 'other' occurred much more frequently when listing limitations than when listing strengths.

The picture that is emerging from the above is one in which adult learners who seem to favor a top-down relationship with their lecturers, whose sense of the academic demands of higher education does not seem to extend much beyond the lower level intellectual skills, who, to some extent, appear to be unable or unwilling to examine their own personal strengths and limitations, also clearly assert that they are capable of engaging in tasks that require considerable learner independence.

There is the further apparent inconsistency between, at best, a tentative claim about proactive communication and the clear positive view about capability for independent learning. Such a situation runs counter to a taken-for-granted belief that those who demonstrate independence in the learning process are most likely also able to take a directing role in their communication with others, regardless of status.

What the overall picture seems to suggest is that students may be responding at two levels in terms of their assessment of themselves as learners. At one level, they are probably defining themselves within the framework of the culture of the formal learning environment, based on their experience of it. At another level, they probably see the notion of 'capability' as touching at the core of their self-concept which they do not consider to be bound by institutional constraints. Whatever it is, this perceived inconsistency requires further investigation.

CONCLUSION

Garrison and Baynton's model has emerged within a research and development field in which there is considerable emphasis on issues related to learner autonomy. Brookfield (1986) and Candy (1991) are two key discussants of self-directed learning. In some respects the concept of self-directed learning goes beyong learner control. For example, Candy highlights the notion of ownership and asserts that there is need to determine the extent to which it is vested in the learner and/or the teaching system.

With more direct reference to teacher education Millar (1989) quoted in Chambers (1992) proposes a process whereby postgraduate teachers in training can negotiate their curriculum with teacher trainers. Millar argues that the seat of authority for curricular decision-making should lie not with the institution but with the adult learner group itself.

It is evident that there are ideological implications to all these positions, a discussion of which is beyond the scope of this paper. However it is important to recognize that any decisions made regarding increased learner control, however defined, will be influenced to a greater or lesser degree by some ideological perspective.

That apart, it is also important to set realistic boundaries within the realm of the attainable, given the context within which one is attempting to re-define the role and status of the learner. This obviously requires some illumination of areas of tension, as for example, those identified above. It also requires a recognition of both the limiting factors and those that are positive, however fragile the latter may be.

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Individualized teaching in the framework
of distance learning course:
Russian experience.

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ABSTRACT.   This article describes the experience of transition from traditional Russian methodologies of education by correspondence towards embedding new computer technologies into distance learning. The emphasis is put on the learner model used for implementation of the individualized teaching. The results being described were obtained in the course launched by the international project on construction managers retraining, which was conducted within the European Community TACIS program together with the University of Manchester(UMIST). The project goal was to teach the basics of western management under conditions of transition to market economy to a sufficiently large group of construction managers (60 persons) from more than 10 Russian cities.

1. From education by correspondence to distance learning: Russian way.

Within the project, such traditional forms of education by correspondence, as intramural sessions with lectures, seminars, software demonstrations, etc., supplemented with self study on site, using learning aids and materials were supplemented with the modern distance learning technologies, including concerted use of different means of information representation and transfer, such as audio- and video recordings of lecture courses, dissemination of magnetic and laser discs, transmission of learning materials over E-mail and fax, TV and radio broadcasts[1,3,4].
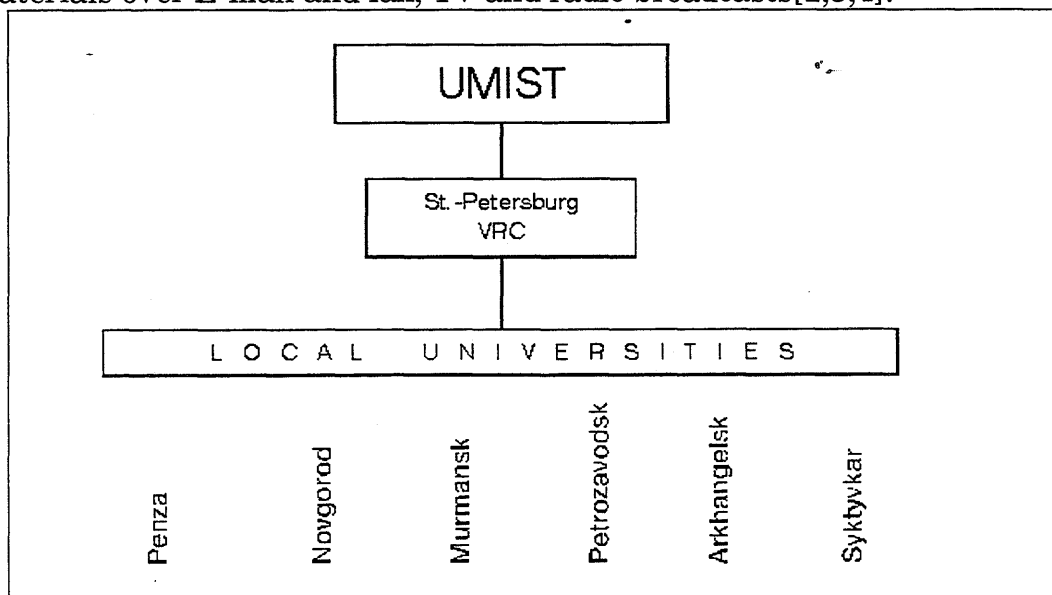

Fig. 1

The scheme of information transfer along the path from Manchester (manuals, teaching aids, assignments) to St. Petersburg (translation, adaptation, preparation of training sessions) to remote locations (self-training in Petrozavodsk, Penza, etc.) back to St. Petersburg is shown in Fig. 1.

Unlike traditional methods used in education , distance learning assumes information transfer and exchange under condition of spatial and temporal separation of information receiver and transmitter.

New technical means and technologies can be subdivided into
- means for sessions conduction,
- means for self- training,
- means for information transfer and feedback support.

These methods need different technical platforms , such as:
- audio- and video equipment,
- TV,
- computer networks with E-mail, database access, electronic manuals, videoconferences, etc.

All these platforms can be used differently, depending on the concrete conditions of the teaching process (remoteness, technical facilities, financing, etc.)

The analysis of Russia's specifics (large distances, comparatively weak technical facilities of educational institutions on remote cites)[8] allows to distinguish three basic approaches:

Low-level approach A (E-mail, videotapes, printed materials, computer support of intramural sessions);

Middle-level approach B (on-line access to remote computers in real time, automated training systems, plus approach A);

High-level approach C (teleconferences and TV bridges , plus approach B).

These approaches form consecutive steps towards modern hi-tech distance learning, through gradual building up of technical facilities. For the given project approach A was selected as the basic one, with some additions from approach B, mainly in the form of computer-based instruction systems, which were being developed for the given retraining course. E-mail was mainly used for delivery of training materials from Manchester to St.Petersburg and for operational communications. Video equipment was used for recording of lectures of the leading western specialists, with subsequent replication. Printed materials (transcripts of lectures, test assignments) were delivered to students by mail and were handed out during training sessions. Computer support invigorates the trainees and renders greater clarity to the teaching materials.

2. New information technologies and distance learning.

2.1. COMPUTER TECHNOLOGIES

2.1.1. Computer support of lectures

The major part of lectures during intramural sessions were given with the aid of special equipment that provides the overhead projection of the computer's display onto the large wall screen. Except of simple illustrations this deductive software materials consists of abstract conceptual graphs based on the hypertext technology[2] which nodes may contain sound, animation, video and other multimedia effects.

The software development cycle contains the following steps:

1) Additional structuring of the lecture materials (determination of hierarchy levels among the notions used, defining of generic/specific relationships between terms, assessment of semantic and scope relationships between logically complete parts of the lecture.)

2) Searching for means of visual representation of the lecture contents (creation of original images, using of clip-art libraries).

3) Development of design solutions.

4) Development of the general script of the lecture, taking into account synchronization of the video sequence and the lecture text.

5) Software implementation.

6) Debugging.

7) Evaluation.

Fig.2 shows one hypertext scheme, where all nodes are 'hot points' and may be detailed by simple mouse clicking.
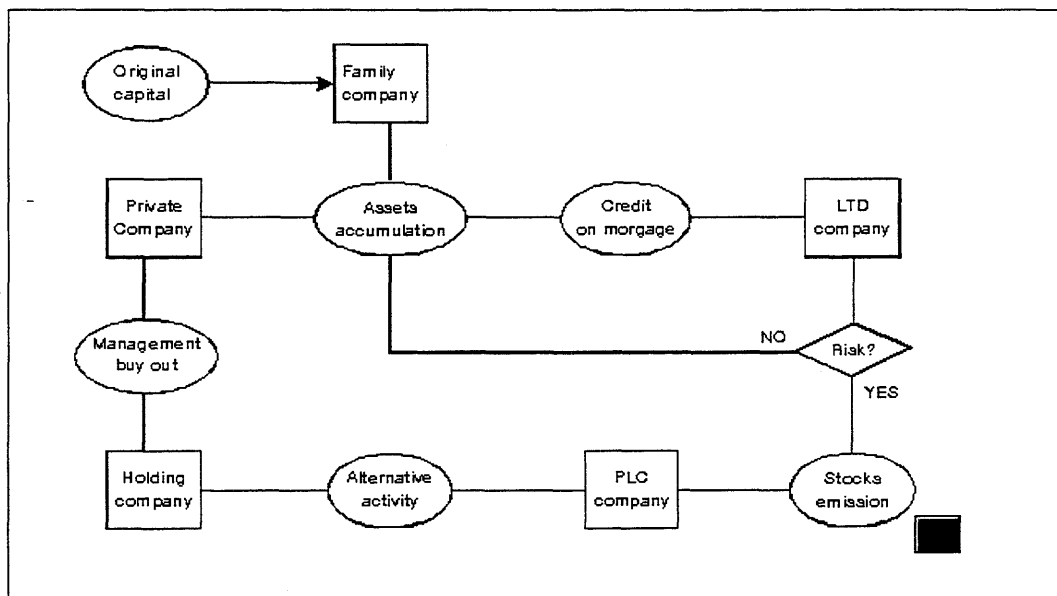

Fig. 2

2.1.2 Computer-based Instruction (CBI).

The advantages, associated with using computers in the process of training sessions, as well as in the process of self-study on-site, are well-known and CBI has proved to be the most powerful tools in distance learning.

CBI for training in the field of construction management , called SUPERMAN is being developed within the framework of the project. The main features of the system is that the system is based on the user model or learner model and consists of two subsystems: author's and training ones. The author's subsystem provides the author of the training course with all the necessary tools for creation, debugging, and editing of the course materials. The SUPERMAN system is based on the TOOLBOOK kit, which provides the problem-oriented language, enabling the author to define the contents of the training materials, and to control their presentation to the trainees.

Formal scheme of the training process can be presented as the following sequence of stages:

(1) the learner' model and preliminary level of knowledge is determined

(2) the interface and scenario are adapted according the learner model

(3) the general schedule of the teaching process as well as subject overview are presented

(4) the learners study training materials, acquiring new knowledge

(5) new knowledge is consolidated

(7) the quality of the newly acquired knowledge is determined, and the decision, concerning further direction of training is taken.

At different stages of the training process, different methods of training can be used. The main methods used in CBI are the following:

- Programmed training, under which the process of learning is controlled entirely by the training system. The main accent here is acquisition and consolidation of new knowledge, as well as testing how does the learner performs the tasks, set by the system.

- Free training, under which the process of learning is controlled partly by the system, and partly by the trainee. In this method, the system provides training materials in accordance with the trainee's requests, concerning the contents of the training materials and the ways he would prefer to work with them.

- Modelling of the training environment is a method of modelling, under which the trainee plays an active role in controlling the course of training. The system can only give advice to the learner and provides the trainee with computerized tools for modelling of objects and phenomena of the real world to be studied.

- Testing of trainees is performed to determine their individual psychological and professional characteristics, and their acquired level of knowledge.

- Consultations include providing reference materials by the system, such as information about the training system and the training materials.

2.1.3 Multimedia technology in CBI and computer support of the lectures.

Among a variety of technologies, that modern computers provide to a teacher, multimedia holds a special place. Nowadays the main application domain of multimedia is CBI systems.

Two factors contributed to multimedia's growth of popularity in CBI systems:

1) Emergence of hypertext systems[2], which enabled to switch from linear structure of training systems to a network one. Hypertext forms an associative network of nodes, each of them storing certain fragments of text, while the connections between them are maintained by hot words.

In SUPERMAN electronics manuals support free navigation through terms concerning construction management. Placing within the nodes, besides textual information, such materials, as graphs, drawings, photographs, one can significantly enhance the clarity and attractiveness of electronic manuals. Hypertext network provides an ideal way for of introduction of multimedia fragments and embedding hypermedia technology.

2) Dramatic breakthrough of CD-ROM technologies into computer media market. CD-ROM provide enough space (about 600 megabytes) to store binary large objects (BLOBS), such as digitized video, animation, music that helps to supply the learners with alive illustrations and activize their cognition[3,7].

Within the given project multimedia formed a base for computer support of lectures and played an important role in the SUPERMAN CBI system

2.2 INFORMATION DELIVERY TO REMOTE SITES.

Electronic communication services in Russia are provided by several organizations, working in the computer networking area Transmission is performed mainly through telephone lines. In the given project the off-line mode of communication was implemented, which supported the performance of an asynchronous communication between two or more computers. The following services were mainly used:
- E-mail;
- Participation in teleconferences, where every participant can get access to information of the teleconference, and send his own comments or suggestions;
- Receiving of programs, documentation, etc. from the file server;
- Telex (teletype) and fax services through E-mail;

- Access to special information servers through which large information agencies, consulting companies, etc. provide their reference materials.

For sending short messages, mainly relating to project information, telex and fax were used. This enabled the teaching team to transmit printed, handwritten, and graphical information over large distances.

Also one TV transmission seance was executed from St.Petersburg to Petrozavodsk when the lecture of the leading professional prof.Kaplan was delivered with the feedback by telephone.

2.3. VIDEO FACILITIES.

In the course of the project video facilities were used mainly for two purposes:

1) As an ancillary tool during seminars, to record the students' opinions for subsequent analysis

2) For recording of lectures of the leading specialists, with subsequent duplication and distribution among the students, that have attended intramural sessions.

3. Human factor in CBI system

Human factor is the bottleneck problem not only for CBI system studies where it is obviously important but also for the other fields of computer science. Any human-computer interaction design besides other factors has to take into consideration two theoretical aspects. They are psychological and linguistic aspect.

The *psychological aspect* can be defined through the two dominant strata:
– Communicative stratum.
– Cognitive stratum.

Communicative stratum deals with the area of communications between the user and the computer and it comprises the problems of perception, understanding, clarity, usability, handiness and some other shallow visible features of man-machine interactions. The problem is how to gain the learner's sympathy and confidence, taking into account the temper and intelligent peculiarities [6].

Cognitive stratum comprises more deep problems related to human mind and memory. In the recent years the interest to cognitive modeling has grown significantly [9]. But still every novice feels the cognitive dissonance between his/her expectations and the interface layout and behavior.

An extremely important question is personal cognitive style, that greatly influenced the learning process. The important factor of efficient learning and communication is coincidence or accordance of the cognitive styles of teacher and pupil (student).

The adequate interface for CBI has to correspond to the personal user's cognitive style. One of the main misconceptions of the designers of the interfaces - is the imposing of their own cognitive models (or the worst variant: the cognitive mixture of different styles when the interface is developed by a team of programmers). This way is pregnant with serious consequences.

One of the main factors of cognitive style definition is caused by functional asymmetry of the cerebral hemispheres and two types of thinking - logical (verbal), connected with the left hemisphere and image - bearing of the right one.

Very important is the style of logical mentality or deductive/inductive strategies. Learners using deduction always perform their cognitive activity with the top-down strategy from the higher level of abstraction to more and more detailed schema. On the contrary, in the variant of induction the learners ascend from the unconnected elementary concepts to metaconcepts.

The *linguistic aspect* deals with 3 main strata of problems: lexical, syntax, semantic.

Lexical stratum deals with the user's vocabulary and the morpho-logical structure of the domain. The problem is to bridge the gap between student's vocabulary (which is determined by his/her education and skill) and that of the teacher (designer). This stratum is closely related to the other ones.

Syntactical stratum depends on the task structure of the program system. It requires more evaluation to be carried out before the creating of the command language syntax.

Semantic stratum describe the interface metaphor problems, the verbal/non-verbal ratio in the interface layout and using abstract and representational icons.

4. Learner model

User model contains the system representation of the user through his/her interviewing or a priori information. User model must include the most essential user's professional and psychological characteristics (parameters) that may influence the human-computer interaction . Learner or student model may be treated as a mode of user's model in the framework of CBI.

Special testing subsystem defines the type of user with the aid of special tests [5] and forms the learner model Lm that later controls the interface and the scenario of the cognitive-dependent part of CBI system.

Testing subsystem defines the following structure of the Lm:

$$Lm = \{ \quad \text{User-type,}$$
$$\text{profact(i):val\_profact(i), ...}$$
$$\text{psyfact(j):} \quad \text{val\_psyfact(j), ...}$$
$$\text{linfact(k):} \quad \text{val\_linfact(k), ...} \quad \},$$

where

User-type - one of the main types in learner's taxonomy;
profact(i) - factors describing *professional* learner capacities;
psyfact(j) - factors describing *psychological* learner features;
linfact(k) - factors describing *linguistic* learner level;
val_... - slot values.

Professional parameters include the expertise level as one of the most important characteristics of the student. The special expertise tests are developed both for professional skills in construction management and computer operating.

Psychological factors are measured by the virtue of set of psychological questionnaires and projective tests.

Linguistic factors are relevant to some extent to the expertise level. The above mentioned problems of special user's vocabulary demand thorough scrutiny of the professional jargon of the domain. But some specific linguistic features caused by the users preferences must be taken into consideration. They are: message modality, semantics of special non-verbal signs, pragmatic attributes etc.

5. Learner - centered interface for CBI system.

The series of experiments assisted to find out the accordance between the Lm and the interface mode (Im), described below

$$
\begin{aligned}
Im = \{ &\text{Interface\_type,} \\
&\text{contr\_par(g):} && \text{val\_contr\_par(g), ...} \\
&\text{des\_par(i):} && \text{val\_des\_par(i), ...} \\
&\text{help\_par(j):} && \text{val\_help\_par(j), ...} \\
&\text{nav\_par(k):} && \text{val\_nav\_par(k), ...} \\
&\text{func\_par(h):} && \text{val\_func\_par(h), ...} \}
\end{aligned}
$$

where

Interface_type - name of the interface mode,
contr_par(g) - *control* parameters (forms of dialogue, working processes...),
des_par(i) - *design* parameters (windows, buttons, color, icons, forms for data input/output operations...),
help_par(j) - *help*-and-*prompt* parameters,
nav_par(k) - *navigation* parameters (constraints, hot keys, ...),
func_par(h) - *functional* parameters (scenario generating, activity degree, working processes...),
val_... - parameter's values.

Each of the Im parameters correspond to the factors of the Lm.

Adaptive interface design provides fruitful computer-based instruction and helps the novices to avoid the cognitive dissonance . The detailed description of proposed approach is out of scope of this paper.

Perspectives

According to experience, described in this article, it is possible to offer the following recommendations on using of new information technologies in distance learning:

1) It is expedient to use a gradual buildup of new technologies of distance learning, using all major technical platforms, from lower up to high technological level. The analysis of specifics of the given project enabled us to compose an optimal combination of the basic approaches, including E-mail, videotapes, printed materials, computer support of lectures with multimedia effects, development of CBI systems.

3) Individualized teaching via learner model and adaptive interface design is a fruitful way in CBI development.

Acknowledgments

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USING THE INTERACTIVE TECHNOLOGIES TO TEACH DISTANCE EDUCATION CHEMISTRY STUDENTS

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INTRODUCTION

One of the historical problems in distance education has been the provision of two way interactive communication, which is considered to be a vital part of the educational process. Amongst others, Garrison (1989) and Store and Armstrong (1981) believe that, to be effective, communication must be two-way or interactive, and that feedback is an essential ingredient. In the internal or classroom type of teaching this can be achieved by tutorials, discussion sessions and individual counselling.

However, in traditional distance education, interactive dialogue is difficult as communication in distance education is mainly facilitated by print-based material, perhaps supplemented by non-interactive audio or video tapes The main student interaction is with the printed material itself and as Socrates is supposed to have said 2000 years ago "you might suppose that written words understand what they are saying; but if you ask them what they mean by anything they simply return the same answer over and over again." In order to provide interactive communication we have, in the past, relied on the occasional telephone call or the requirement of the student to present on campus for some defined period of time. These processes are either too slow, too costly or defeat the purpose of education at a distance, and are, at best, a poor substitute.

It would seem that the computer and other interactive technologies may be able to provide this essential ingredient and as they do not require the constant presence of the lecturer should be readily adapted to distance education. Added to this is the possibility of designing programs in which the student is able to control, at various levels, their own speed and degree of instruction, thereby introducing a measure of interaction not possible using traditional distance educational methods and perhaps not even by traditional on-campus methods.

The computer makes the solving of quite complex problems very easy and enables us to produce apparent movement which can be seen and controlled. This ability to show and control moving images on a screen would appear to have an immediate application in the teaching of chemistry which relies to a great extent on explaining the movement or change of tiny particles which cannot be seen even by the most powerful microscope. Added to this is the computer's ability to select and show the literally millions of permutations and combinations of atoms and molecules which make up the study of chemistry.

Yet at Monash, and other Australian Universities, although there are many distance education courses which are being taught by these methods, few of these are in the sciences, particularly chemistry.

REQUIREMENTS OF THE TECHNOLOGY

Of the various forms of interactive technology, not all will be suitable for teaching chemistry or appropriate for distance education, often because of a lack of facilities, hardware or software. Educationally the technology must be capable of transmitting the teacher's message to the students in a way which they can understand and which can be utilised by their learning methods and strategies. Not everything in the curriculum is learnt by the same technique and Middlecamp and Kean (1988) have suggested that chemical content may be divided into three types, fact, concepts and rules, each associated with its own set of learning strategies. The technology should be able to support most, if not all these techniques. Furthermore it should allow the users to maintain some control over the communication process in order to use these learning strategies and to proceed through the lessons at their own pace. It should be capable of presenting and answering problems and directing the student when difficulties arise that is, supplying feedback.

The teaching of chemistry relies to a great degree on diagrams and pictures. Mostly these are not real pictures but are diagrammatical representations of phenomena which are too small to be seen and often they are dynamic so that being able to show movement would be of advantage. This means that some form of animation would be desirable, however real and moving pictures may not be so necessary. Finally, the technology should be able to support most, if not all, the five essential elements of two-way communication as proposed by Store and Armstrong (1981), that is immediacy, regularity, explanatory, conciseness and clarity or at least in a better way than print-based material does now. Of these, print is probably adequate for regularity and conciseness but may not be as good as the technology for explanation and clarity due to the latter's graphics and animation abilities. The real failings of print are, however, interactivity and immediacy, which the technology may be able to remedy.

But is the computer and interactive technology the full, or even the partial answer to providing this essential two-way communication to the distance student? In an article which, in these days of rapidly advancing technology, may appear a bit dated, but is still relevant, Gayeski (1989) queried the educational value of many of the technological programs in existence at the time, and questioned whether the job, in many cases, could be done equally well and at less cost using traditional methods. Also, a comprehensive study of distance education chemistry students at two Australian Universities indicated that, even in first year, these students had well developed techniques for studying chemistry and were disinclined to change, being almost totally resistant to any suggestions to modify their study habits.

In the end, however, no matter how good the technology or the communication is, it must be accepted by the client, the student. But what do the student's think about learning in this way? Will they accept it as an alternative to the printed material and to what extent? As a complete substitute or as an aid to the "real" learning, book-learning?

To try and answer these questions and to get the student's perspective on alternate ways of delivering material two projects were carried out as part of the

aforementioned study. The first was to survey the students' opinions and the second to test out a program in a real, learning environment.

ATTITUDES AND OPINIONS

In this project a survey was conducted to ascertain the attitude of the students on the type of interaction needed between themselves and the University, (including staff, students and other learning support systems), their opinions of the effectiveness of the print-based material presented at this time, and how they would accept other forms of presentation of material, either as alternatives or supplements.

The target groups were students from all courses which required a study of first year Chemistry at Central Queensland University (CQU) and Monash University (MU) in Victoria. A total of 146 students were sent the survey material and 91 (62%) replied. About 35 of these students were also interviewed personally.

Results of the survey will be discussed under the headings of the interactive technology.

Teleconferencing

Teleconferencing may have a limited use in teaching chemistry. Students at both universities had participated in some tutorial sessions conducted by telephone but were not enthusiastic about their value. 74% of the respondents considered them to be "possibly useful" but only a few regarded them as definitely useful.

The greatest failing of teleconferencing appears to be the inability to transmit pictures and although these were distributed in paper (or in a few cases, video) form in advance, anecdotal evidence suggests that the constant referencing to them was tedious over the telephone and was misleading in some circumstances as the teacher could not see or check on the diagram to which the student was referring.

Nevertheless teleconferencing was seen to have a certain educational value in that there was a personal interaction mainly between the student and tutor. Most participants in the study considered that some form of communication with the tutor was at least important, if not essential.

Although apparently easy to set up, experience indicates that it is difficult to get the students together at the same time. In some part this is due to a reluctance on the part of the student, particularly if they feel that they are behind in their schedule. Distance students see themselves as independant learners and in the majority of cases are reluctant to interact with other students. In fact none thought it was essential to meet other students and only 38% thought it was of any use at all.

Video conferencing

Video conferencing would appear to remedy many of the disadvantages of teleconferencing as a true video conference would provide a two way exchange of live television image as well as audio signals. Few of the respondents to the survey had participated in videoconferencing and only two considered they had access to the

facilities for videoconferencing. To a large extent this can be explained by the considerable distances involved in attending the outreach centres where these facilities were located, particularly in the case of the Queensland students, many of whom lived well over 100 km from these centres and therefore would have a two or three hour drive to reach them.

Added to the distance factor, another reason why full video conferencing is not widely used is due to the enormous cost involved. Setting up routine video conferences of such a length as to be educationally useful would be beyond the resources of many educational institutions. According to Garrison (1989) there is also a realisation amongst educators that full video motion is not necessarily of great importance and when it is, less expensive graphic and other media can take it's place. Whereas that may be arguable in the general case, in chemistry actual motion video would not appear to be crucial for teaching theory and therefore a great deal of theoretical chemistry can be taught using graphical images rather than real ones.

The real advantage of videoconferencing then may well be as an introduction to and visualisation of staff to students because most participants in the study indicated that they would like to "meet" their tutors at some time and that this would make talking to them on the telephone more "comfortable".

Interactive computer programs

Although computers have been used in teaching chemistry for over 30 years, to be truly (randomly) interactive with distance education students it must be used with telecommunications links so that a student-teacher face to face communication can be achieved. However, it can be argued that the computer should be seen as a new medium to do new things and not as an electronic replacement for traditional methods, and that the real breakthrough will occur when the computer is used as a stand alone educational system. Therefore it seems that there are two distinct applications for computers in distance education, the on-line or transmitted mode and the off-line or local mode, both with their individual strengths and uses, and both potentially useful in teaching chemistry.

Stand-alone computers

In local mode the computer can be used to generate and present such things as lecture material (electronic book), drill and practice, simulation and tutorials. All these functions are available at low cost due to the availability of packages which enable non-programmers to develop and produce their own system of computer assisted learning. The hardware is simple and available and it seems a reasonable expectation these days that a student of science will have their own computer.

The survey has shown that this is only partly true. Although most students indicated that they had had access to a computer, not all could use it regularly for study purposes. This was usually because their access was at their place of employment. A little more than half (55%) indicated that they could use a computer for regular study. This figure should be regarded with caution, however, as it may be that some do not want to use it rather than cannot. Given the above figure, a surprisingly high 57% said that they would use computer generated programs as a supplement to the printed material and 32% would use it as an alternative.

An explanation of these figures may be that many students see the computer as an extra tool to reinforce their learning processes through the printed material rather than to replace it. The interviews supported this view as most students interviewed had had experience of drill and practice programs and considered that the had gained considerable benefit from them. It was only the most computer-literate students, with their own computers who would consider receiving material only in computer form.

On-line computers

On-line mode computers can be used for a type of image conferencing, for electronic mail transmission, for bulletin boards and for access to data bases. The first three of these are interactive. Again the facilities for on-line computer communications are readily available with the necessary communications hardware and software being freely available and relatively inexpensive. Probably the most expensive ongoing cost is in the transmission but with the advent of AUSTPAC, AARNET and similar networks this cost is now more reasonable and more readily predictable.

Nearly half the students (almost all those who had their own computer) indicated that they would prefer the use of electronic mail but few supported the idea of using a bulletin board to solve problems. This may again be related to their perceived independance and their reluctance to share their problems with other students.

Videodiscs

The use of laser videodiscs received a great deal of attention sometime ago, but mainly in the biological and health related sciences where real images are much more important that they are in chemistry. The biggest disadvantages of videodisc, which is an analogue system, is in the cost of production of the disc and the cost of the playback mechanism. Videodiscs cannot easily be generated by individuals or even by educational institutions, therefore reliance must be placed on commercially available discs and there are not many available in chemistry. Added to this is the cost of the playback unit which is several thousand dollars and therefore out of the reach of most students.

Digital optical discs

The digital optical disc, however, enables the storage of large amounts of text and graphical material and smaller amounts of real images, either commercially prepared as in CD-ROM and DV-I, or by WORM systems where there is a facility to write to the disc. The playback units for the digital discs are much less expensive than for analogue discs and are now within the range of the home user.

However the problem with digital discs at this time is that there are not many available in chemistry and only a very few students have the necessary hardware, so these systems were not surveyed. Problems with digital discs such as rationalising the systems and getting real images onto the discs in reasonable quality and size are quickly being solved. It is expected that the digital disc will ultimately be a valuable tool for distance education. But as Gayeski asks, will they be any better than a handful of computer discs and a video tape?

TESTING A PROGRAM

Using the results of a comprehensive study of students learning techniques and strategies carried out at the same two universities, a computer program was developed to replace the printed study guide in a section of Organic Chemistry. According to the study, three of the most pressing problems faced by distance students were in the accessing of a glossary when unfamiliar words or expressions were encountered, revising previously studied material and in presentation of examples and exercises.

In this program the printed study guide normally used as a substitute for the formal lecture was replaced by an interactive computer program written in hypertext. The program used the unique properties of hypertext in "hiding" extra information or concepts behind "keywords" until it was required by the student. The main or front text therefore followed the existing text so as not to introduce another variable, but where background information was required, extra explanations needed or reference made to presumably known or previously learned concepts, the required information was able to be accessed as required. Therefore the student was able to choose their own level of instruction and to proceed through the program at their own pace.

Although the students could not alter the program, it had the facility for them to add their own notes. This was considered important because it had been found previously that the large
majority of students felt the need to write down their own explanations and identify key or memory trigger words.

Hypertext also brings another dimension to the self-help or self-assessment problems presently used in the study guides. Using a drill and practice paradigm, questions were asked in the same manner but the answer hidden and only revealed by the student when necessary. Students were guided through the problem solving exercise until ultimately presented with a worked solution.

In the first trial of this program with 18 students at CQU, none of the participants used the program as an alternative to the book. About half used the program but only as a supplement to learning. The reasons for this are still being investigated but may be due to the previously mentioned fact that the students had already developed their own techniques for studying chemistry and were reluctant to change them.

The second trial with students from Monash University is still underway, but preliminary indications are that there are several students studying by computer alone, but that these are exclusively the very computer-literate who already use them in their work and privately. This will be discussed further at the conference.

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Quality Academic Support in Open and Distance Learning

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Introduction

In the Open and Distance Learning System **(ODLS)**, there is a very wide diversity within the student body and the programme structures. Accordingly, there is a greater flexibility in the provision of **(Simpson: 1993)** academic support. Once a course has been launched and presented to the students, quality learning is concerned with what goes on in the subsequent academic support.

Some of the major problems in Open and distance learning are **lack of quality in academic support inputs, inadequate provision of infrastructure facilities and poor management of its services**. Quality assurance in course-development is important but ensuring quality in academic support system is equally essential for effective learning. Quality Assurance in open and distance learning is incomplete unless appropriate standards are laid down for providing quality academic support. A few strategies have been discussed in this sequel for ensuring quality academic support in open and distance learning.

Case Studies

There are various models **[Madan, 1993]** of distance education. The Indian system is mainly confined to the two principal models namely the dual model (correspondence model) and the open university model. There is a striking variation in their corresponding modes of academic support both in nature and content. The dual model largely depends upon the periodic personal contact programmes **(PCP)** through face-to-face intensive teaching classes, while the open university model relies heavily on the regional counselling/tutorial sessions. Two case studies are cited here to elicit information from the students mainly for evaluation of the academic support inputs such as

- **library and reading room facilities**
- **receipt of the print-materials;**
- **organisational activities**
- **administrative services**
- **intensive teaching classes during the PCP;**
- **counselling;**
- **assignments/students response sheets;**
- **audio-video facilities;and**
- **tutorials.**

The objectives of these studies were

- **to study the students' views on the utility of various academic support facilities offered to them**

- **to identify the problems faced by them while working on the courses and**

- **to seek suggestions from them in order to improve the quality of academic support**

- **regarding the Bachelor Degree Programmes (BDP) of the two models.**

The first case pertains to the School of Correspondence Courses of University of Delhi - a dual model of distance education. the study consists of nine items related to academic support variables manifested through the relevant questionnaire. A three point scale was used for all the items. The questionnaire was administered during the annual twenty days personal contact programmes at the six centres for six groups: three for the female students and three for male students distributed over each year/part I, II, III. The sample size consisted of 1210 responses covering six courses as given in Table I:

<p align="center">**Table - I**</p>

Year Course/	I	II	III	Total
English	150	100	75	325
Hindi	120	110	90	320
Economics	90	60	50	200
Political Science	75	50	40	165
History	60	45	35	140
Mathematics	25	20	15	60
Total:	**520**	**385**	**305**	**1210**

The over all reactions of the students was captured mainly by five items namely **intensive teaching classes, response-sheets, course-delivery, organisation of PCP, administrative services and library facilities.** Response regarding the remaining items was ineligible due to their total absence in the system. More than 80% of the respondents preferred more contact programmes at - least twice a year each of fifteen days duration. About 91% found the intensive teaching sessions very useful. Over 60% were disappointed due to delayed receipts of the print-materials which proved to be a handicap for utilising the academic support facilities. Approximately 88% complained of non-receipt of their corrected and evaluated response-sheets from the institution. About 60% wanted the PCP to be better organised, while over 80% were critical of various administrative and support services. Hardly 10% could manage to utilise the library facilities due to their inadequate provision at the two regional centres.

the **second study** was undertaken in the Indira Gandhi National Open University **(IGNOU)**. About 68% (67 out of 1000) students responded to the questionnaire designed for assessing the academic support system available at the selected 10 study centres of the Bangalore and Delhi regions of **IGNOU**. Table II shows the number of students and credits belonging to the

- three groups of students at I, II and III levels of the **BDP**

- three streams of the courses namely **the foundation, elective and the application-oriented courses** covering the subject areas of **Humanities, Social-Sciences and Mathematics.**

Table - II

Courses	Credits	Levels			
		I	II	III	Total
Foundation	24	102	76	21	199
Elective	56-64	118	102	81	301
Application-Oriented	16-8	82	54	42	178
Total	**96**	**302**	**232**	**44**	**678**

Analysis of data revealed that 47% of students perceived the face-to-face counselling/teaching component most useful for academic support followed by an equal number liking the continuous assessment through assignments, while hardly 22% having been able to utilise the audio-video components and the library facilities. The open-ended questions were mainly framed to elicit information related to the problems faced by the students in the academic support system and solicit their suggestions to improve it. An inventory of statements was prepared and grouped together. The analysis of the data showed that only 7% of the students did not face much problems related to the academic support and services. However, problems expressed by over 87% students were related to:

- the delayed receipt of print-material - a serious hazard for utilising academic support;

- indefinite delays in despatch of assignments and non-communication of their assessment;

- slow response to queries for clarifications;

- rude treatment and administrative lapses;

- non-availability of the counsellors and the coordinators at the study centres;
- unsatisfactory feedback from regional centres and the faculties;

- avoidance of removing difficulties during counselling sessions;

- lack of professional skills of the counsellors.

The respondents suggested improved infrastructure, better A.V. equipment's, more library facilities, increased number of sessions for teaching and counselling, regular availability of the teacher/counsellors, improved interaction and better organisation/management of study

centres. They further suggested timely receipt of print-materials and block-wise feedback on assignments and short-questions rather than essay type questions.

3. Problems and Weaknesses

A comparative analysis of the two models **[Madan, 1993]** in the Indian situation suggests a few serious problems with regard to their respective academic support systems. these are summed up in Table III:

Table-III

Variables	Open University Model	Dual Model
Face-to-Face Counselling/ Teaching Sessions	Inadequate	Partially Adequate
Correspondence Tuition	Partial Only through assignments	Non-existent
Contact Between Faculty and Students	Non-existent	Partial through PCP
Monitoring of Academic Support	Partial through Regional Academics	No System
Management of tutorial/ Counselling System	Unmanageable	non-existent
Concern for Students' Services & Problems	Lacking in many ways	Inefficient
Coordination among faculties, Regional academics and support staff	Inadequate	no coordination
Access to Media materials and utilisation	Decreasing	Insufficient
Regional/Administrative functioning	Partially Efficient	Inefficient
Material Distribution	Partially satisfactory	Not satisfactory
Feed-back from students & Regional Academics	no system	non-existent

The two case studies and the problems described in Table III together reveal some serious weaknesses in the academic support system which are mostly true of the **ODLS** prevalent in a developing country like India. Some of these may be enumerated as follows:

- Academic support system **lacks resources, direction and strategies** to provide efficient services and to respond to the students' needs. no monitoring exists to ensure quality in **PCP**/counselling across the student population.

- The counselling/**PCP** sessions do not provide the course teams with **feedback on the success and failure of courses**. the face-to-face teaching and counselling serves only a low percentage of students.

- **Academic support system has not been fully developed.** It is neither adequate nor appropriate. The course presentation is just a `postal delivery system' for print-materials. There is no opportunity for the regional academic staff to contribute to the course development and preparation of academic support materials.

  There are considerable **inconsistencies** between courses in terms of contact hours for counselling and the availability of quality management at the study centres. The preparation of students for higher education through distance mode is inadequate and inconsistent. The focus on the needs and aspirations of the students is lacking in many ways.
- **Poor level of student feedback** to the course team/course coordinator restricts rewriting and improving courses.

- Academic support is **heavily dependent on the part-time non-institutional staff** for academic support who have no committment to the cause of distance learners. There is hardly any provision for training and orientation of this staff to do justice to the cause of academic support.

- Permanent academic staff resources are almost entirely absorbed in developing and maintaining the course-work. **The capacity, time and energy for development of academic support strategies are at a premium.** Training of new staff and orientation of external staff are difficult and uncertain. The non-standardised contracting system leads to an increasing tendency of low morale.

- **Central academic staff is unable to get the benefit of meeting their students** to know their difficulties and have direct feedback from them. There is no extensive link of the academic staff with its students.

- **Administrative processes of the academic support system** have yet to become **learner-oriented. Limitations** of the system in the production of academic support materials and their access to the students for proper utilisation are gradually demotivating the quest for distance learning.

4. Strategies for Quality Assurance

Academic Support approach ought to be pro-active **[Bell; Harris, 1990]** in-active and **post-active** in respect of the students' learning needs. The two case studies reveal that the academic support in open and distance learning has to be exhaustive in providing the widest possible range of inputs based on:

- **the concept of academic support;**
- **diversity of students' needs;**
- **notion of counselling and face-to-face teaching;**
- **provision of correspondence tuition;**
- **management of support services.**

The basic **concept of academic support** for quality-learning calls for an additional responsibility on the course-teams and the regional academics to plan for flexible academic support in a variety of ways such as :

- improving upon the notion and design of assignments/response-sheets;

- producing supplementary study materials;

- undertaking periodic reviews of the academic support inputs;

- initiating special arrangements for academic support to students on **difficult academic contents.**

The process of the feedback on and monitoring of the quality of academic support should be undertaken on a regular basis. Steps should be taken to assess all such aspects of learning/teaching process and should not be restricted only to information gathering through questionnaires. **Rigorous evaluation and appraisal should be an important feature of quality assurance in the academic support system.** The respective roles of faculties, course teams and the regional academic staff should be formulated in monitoring, supplying feedback to each other and in maintaining an appraisal record.

The **ODLS,** being essentially a mass production and complicated delivery system has to meet the **diverse needs of the students** and the inherent flexibility of programmes and courses. It is, therefore, desirable that:

- the **quantum and the principle of 'academic support'** should correspond to students' **needs and entitlements;**

- appropriate academic support inputs should be designed for those students who are drawn to distance learning especially because of the specific features of the programme/course;

- the relevant learning needs across the student body should be identified and accordingly steps should be taken for meeting those needs;

- **alternative forms of academic support** should be offered as a matter of policy to the remote and isolated students;

- a properly resourced institutional framework should be established to facilitate, foster and provide formal links between the faculties and the regional academics to ensure that the needs of students can be directly fed into course production decisions;

- provisions must be made for the systematic development of preparatory materials and of schemes of collaboration with other providers.

The **notion of counselling and face-to-face teaching component** will have to be re-examined with a view to achieving the goals of academic support for quality learning. Following suggestions may be helpful:

- **Procedures should be established for counsellors to report back to the regional centres on how the used their time for different students for extending academic support to them.**

- **Systematic feedback should be obtained on counselling provision and services to students and the main findings b the regional academics** on this should be reported to the faculties to respond to the implications of that feedback.

- Faculties and the regional academics should jointly produce **counselling notes and formats** for counselling in particular subject areas and courses.

- Some basic norms for conducting face-to-face teaching should form a set of criteria for quality teaching-learning. For this, **the blend of counselling and intensive face-to-face teaching sessions will be of immense help.**

- The resource persons should be made familiar with the course and provided with the relevant materials. the should receive advance guidelines which should be geared to the needs of those who are unfamiliar with the course, or new to the system. these guidelines should include a statement of the institution's expectations regarding their **roles and responsibilities.**

- Each resource person should be contractually obliged to attend a **staff development session.** Necessary instructions should be given on the lines of distance learning, identifying the learning needs and giving guidance on distance teaching/learning methods.

Correspondence tuition is central to the learning process. It applies to every student. Indeed, for many students it is the detailed commentary on their written work and the only form of individualised tuition that they receive. For correspondence tuition to be effective, following steps are necessary :

- Evaluated response-sheets/assignments should be received back by the student in time to inform them about the work on subsequent assignments. Quality correspondence tuition requires a **constructive schedule** of the two way flow of assignments/response-sheets.

- Students should receive the written comments on a **formative assignment** at least one week before the cut-off date for **any summative assignment [Bell, C; Harris, D; 1990]** to which it is linked;

- The institution should review the schedule at the stage of production of assignment timetables, draw course teams' attention to potential problems and prepare periodic reports.

A broad set of issues, activities and processes related to **quality management** merit serious attention if academic support is to be optimised for quality assurance in the system. this calls for

- the **Students' Manual** containing charter of student rights /privileges/ entitlements/ duties, matters related to course materials, assessment, administration, all forms of academic support, counselling feedback and all other documentation;

- the **Institutional Manual** to set out explicitly what the institution and its students can legitimately expect (and not expect) of its regional academic staff and what this regional academic staff in return can and should expect (or not expect) of the institution;

- **Regional Academic Manual** setting out the expectations from tutors/counsellors and other regional academics and service and support which the regional academic staff has a right to expect from faculties, course teams, management regarding the assignment tasks, counselling/tutorial and other related activities.

- **recruitment and retention of qualified and talented counsellors** and committed part-time staff for academic support which is a fundamental pre-requisite in the deliver of quality academic support;

- **involvement of the regional academic staff** in course-development, maintenance and preparation of academic support material;

- **staff-development schemes** and on-going training programmes for various categories of staff involved in the academic support services.

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A PIECE OF THE JIGSAW: STUDENT ADVISING IN DISTANCE EDUCATION

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One of the less visible components of distance education, the one nebulously termed "student support" can drift out of awareness and to the bottom of priorities, especially in the face of funding cuts and the drive for efficiency. While it is understandable that the most visible component, the course package, may be valued as the most tangible, presentable and reviewable aspect, suited to demonstrating quality to the sceptics, this emphasis can overshadow the human interactions that are less easily documented or measured, but are equally important for student satisfaction and success. The course package is just one piece of the complex jigsaw that forms an educational experience. As distance education moves to a new phase of more general acceptance and widespread use and as it explores newer technologies, it is important to ensure recognition and continuation of the valuable, but often invisible interactions between students and a supportive representative of an educational institution.

Student support generally includes a range of activities; tutoring, marking assignments and exams, academic and personal counselling, and student advising. Student advising is used here to describe activities that help students find their way when dealing with academic and administrative issues and balancing priorities among studies, life, family and work responsibilities.

Student advising may be carried out by people in a variety of roles; registration staff, academic advisors, distance education instructors, counsellors. It is often fitted in as one of many responsibilities, with little or no provision in workload allocation and often without funding for long distance telephone or postage. Yet those who provide these services are committed to helping students find their way through the institutional maze and over educational and personal hurdles, as they start out with uncertain directions and move towards a goal that becomes more defined over time.

The reflections by two women who have included student advising among their multiple roles capture something of the texture of student advising. They have more than fifty years' collective experience in distance education, as students, instructors and advisors. Their thoughts also relay a distillation of the experience of hundreds of students for whom they have been advisors and advocates.

Introducing the advisors

Professor Sally Haag has taught classical studies at the University of Waterloo for over 30 years: more than 20 years ago she was one of the first in the Faculty of Arts to take on the challenging task of preparing and teaching distance education courses. During the next few years, more of her colleagues in the classical studies department took on distance teaching, because as she says, "Classics had always been in the forefront, finding and leaping into new

opportunities, as a result of living on the professional precipice". As more courses became available, increasing numbers of distance students began to concentrate on classical studies, and they needed advice about planning their program for a major and later, an honours degree. As well, while Waterloo's distance education program expanded exponentially, more and more faculty were seeking advice about how to go about the task of transforming their classroom teaching into a course package.

These developments led to two additional roles. From the outset, Sally served as advisor to all distance students in the classical studies department, and for eight years she was also distance teaching advisor in the university's instructional development office. This latter role entailed assisting faculty who taught distance education courses, through individual sessions, workshops, a quarterly newsletter and two handbooks, one for course authors and one for course tutors. As well, she has authored and taught over a dozen distance education courses, and continued teaching three or four courses a term. In 1993, Sally received the university's Distinguished Teaching Award and was especially cited for her work with distance students. Having completed some of her primary education as a distance student, Sally continues to take distance education courses for her own enjoyment.

Dr. Monique Layton, a program director at Simon Fraser University's Centre for Distance Education since 1989, was not only a distance student herself, but her father, while living in Morocco during the 1930's, completed an entire civil engineering program offered by L'École de Travaux Publiques in Paris. Monique herself began taking distance courses while living in Kamloops with her husband and "four and a half" children. During summers, she studied on campus, "one summer I was pregnant, the next summer I was breastfeeding", and after completing her bachelor's degree, went on to complete two master's degrees and a doctorate in anthropology. She describes herself as "an absolute devotée of distance education".

Monique worked with the Universities Council, which coordinated budgets and programs for post secondary distance education in British Columbia. In that role, she prepared a report on access to university education in non-metropolitan areas of British Columbia, a 95,000 hectare province where mountain ranges, remote coastlines and a northern climate can present formidable barriers to transportation and communication. The report included a case study of one community demonstrating the impact of lack of access to complete university programs, one factor which led to the establishment of a coordinated distance education system for B.C. Monique subsequently coordinated an Open Learning Agency project in "enhanced delivery", which supplemented distance education courses with weekly face to face instruction. At Simon Fraser, her role as program director in the Centre for Distance Education included working with course authors and providing advice and support for students enrolled in distance programs in criminology. For four years, Monique was also co-editor of the Journal of Distance Education, published by the Canadian Association for Distance Education and Simon Fraser University.

Here are some reflections from Sally and Monique on issues related to student advising.

How they regard their role

For Sally, advising can be regarded as one component of teaching in the broadest sense, and includes academic tutoring, academic advising, and practical help for students whose personal circumstances require appealing to various regulatory provisions for special consideration.

There's various aspects to advising. There's academic stuff, that you do in connection with the course. A student writes and says, "I cannot understand how contracted verbs work." And you write back and say, "well have a look at such and such, another text, and you'll see that they display it differently, and look at my notes and you'll see how, and so on." That's strictly academic tutoring.

And then there's the sort when they ask you, "What course should I take next?" or "Do you think it's sensible to do both Greek History and Roman History at the same time?" And you write back and say, "Well, these are the pros and cons."

And then there's the sort that says, " My elderly mother just broke her hip and what am I going to do and I'm going to have to drop out of the course." Usually, I take a personal response, and say, "I know all about that, that happened to me too, and I guess the best thing for you to do is probably this or this or this. I can arrange the technical side, give you an 'incomplete', or postpone the exam." There's the sort of practical side of how to cut through the red tape, and then there's the sort of motivational or encouraging side. And all of that goes along with the job of teaching a course. Anything can arise at any time.

Monique tailored her role to a particular context and to the practical demands as they emerged.

At OLA, I became aware of the various types of support you could give to students, and how well received they were, or were not... When I came (to SFU) at first, I didn't have an office; I had boxes for six weeks. So I was in the tutor marker's office. But it gave me time to think a little bit, to read a little bit about what had to be done, and mostly to become aware of how important the tutor markers were, because I could hear them talking to students, and I tried to reconstruct the other side of the conversation.

Monique continued her interest in the tutor-student relationship, but her own role of advising students developed in response to another need that emerged. In B.C., component courses in the criminology program are offered by several institutions and students often need help in dealing with the complex array of prerequisites and requirements for transfer credit in order to reach their desired accreditation.

...Most of the time, I was the first person to respond. maybe not the first person they had contacted, because they would go here and there, and finally they would come to me. But I had the answers and I probably had the right answers, but at least I had consistent answers. At one point, I discovered that students (from another institution) had been allowed to go

on taking courses until such time as they couldn't transfer here (to SFU) any more. It was not the fault of the other institution, simply that students didn't ask questions. So they had a whole bag of courses- either they could drop a whole year's worth of study, and come back to us, because of a bureaucratic requirement (that students complete a minimum number of courses in the university from which they intend to graduate). They didn't realize- they thought they were taking a B.A. in criminology at SFU through the other institution.

At that time I decided I was going to do the advising for anybody who was taking criminology courses (at any of the institutions). So we had very good discussion with all the advisors, and announced that we were taking back (advising about criminology programs). They were relieved.

What Students Need: Contact, Clarity, Advocacy, A Pilot

Both Sally and Monique feel that a bit of contact can go a long way, for a distance student, especially if the response is timely and considered. They also recognise that some distance students maintain their distance by choice.

CONTACT

Students are always incredibly touched when they say, "I am Elizabeth Smith, and I'm a student...." and I say, " Oh, Elizabeth you don't have to tell me who you are, I know who you are.." They can't believe it. It's really just because names stick in my mind easily off class lists, and I remember their work, I remember them on paper. When they phone me up, I do know who they are in that limited sense.
...I do ask them to send me a little bio sheet, and they get one from me, but it's a very bare item. But out of little scraps of information, it's not like I have a picture in my mind, but I just know a number of things about that person. It's like part of a jigsaw puzzle, and every little piece that comes in my direction I will plug in to the puzzle. I don't think of doing that deliberately, that's just the way it goes. And when you actually meet the person, you get more pieces for the puzzle.

A lot of distance students choose to be distance students. They prefer it, they're the closet students. Sometimes some of them will emerge very tentatively, and discover that there really is somebody at this end, somebody who is interested in them, in that limited sense, someone to whom they can send a small joke at the end of their essay and get a similar item back again. A human interaction on a small scale. Then they get braver, and actually appear here, sometimes, or they call. You can see them emerging, developing confidence that this is not just a great threatening institution.

Monique's advising was not in the context of a direct teaching role, but she provided guidance to students who needed information, reassurance and a voice of experience,

They would ask... how many courses should they take. So I would immediately ask whether they were working full time, half time, whether they had a family, and I explained they didn't want to make life miserable for everybody around them and for themselves. Because nothing would be worse than not doing well in a course--- people become discouraged, that's not desirable. And I try usually to tone down their ambitions, try one, maybe two courses and see what happens. It's only four months, 13 weeks, so you haven't really wasted that much time if you find that you can handle more. See, in Criminology we dock students 10% of their grade for each day that they are late with their assignments. So again, that's one thing I had to warn them about.

And mostly I think it should be an enjoyable experience for them. And you know, you can feel them relaxing when they realize that they're talking to someone who knows what it's like to have that experience. Some people were saying, "I'm quite old, I'm in my forties," and I say, "Well I went back to school when I had five children and I was in my forties, and it was great fun. It was difficult, but it certainly was worth it." After you have actually talked to them, you understand what they want and tell them to enjoy the course, to have a good time doing it. It's better than having a button pushed giving them exactly the same message. You could have a greeter-really I was a greeter- that's what I was.

CLARITY

The problem-solving role included in student advising operates at a number of different levels, reviewing requirements, sorting out detailed academic regulations, and helping address the myriad situations that arise for adult students with multiple demands on their lives. Sally describes various types of responses and interventions she will undertake on behalf of students. There are over 200 distance students taking a classical studies course in any given term: anyone who asks about taking more courses in the department receives a prompt response.

If they show any kind of interest, even of a tentative sort, like asking me which course to take next, I never miss a chance to send them the information sheets. I'll send you all this stuff right away and you can get back to me. I don't think I'm too pushy, but I like to make sure they have all the information. I have a whole set of information sheets and check sheets; I'll tell them which courses they still have to do and all the rest of it. And I send them a check sheet with a note saying these are the things I send to all the majors every term

For the cohort of about 50 students majoring in classical studies, and over a dozen honours students, academic requirements tend to become more complex as students progress through the program

After the grade reports come out, I send out these check sheets, which have two columns, one of which says, "you have these courses" and "you still need these courses". And they like that. Then I'll write them a letter on the back if I have anything additional to say. I hardly ever type anything, which is very eccentric, but I think it helps- I think they like to think there's this strange eccentric person at the other end who still pushes pens. I do make a

copy, and I keep all their files right beside my desk, so that the moment they phone I can say, just hold on a minute and I'll get your file, because the majors do call fairly often. Once or twice a year I hear from at least half of them, and they say, what am I going to do on this or that, and then I can pull out the file fast, because they're calling long distance.

It's pretty complicated to become an honours student. At the senior level, they work much more independently. All those honour students I know personally. Most of them have visited here at some point. Someone in the department certainly knows them quite well, has taught them several times, has written letters back and forth. I can tell you quite a bit about most of them.

Most of them become majors probably in their first two or three years of becoming a distance student. Honours, another three or four or five year after that. Our honours students probably have student i.d.'s of between 7 and 12 years ago, because they're very busy people, and very few people will do more than 2 courses at once, and senior courses, just the one. But interestingly, quite a lot of those honours students, maybe 25% or so, have been on campus, and have come here one night a week. But the senior thesis work is heavy going for them. I'm just watching them starting on it now.

Monique as well, has developed print information packages for each distance course in the criminology program. When students call with an inquiry, the response is tailored to the students' requirements.

There were a lot of nitty gritty types of things I would advise them on ...If they want information, they get information. I am willing to listen and probe a little bit to find out their personal circumstances as it relates to the amount of work they would be comfortable doing. Lately in the last year or so one of my jobs has been to tell them it was going to be difficult for them to take the courses they wanted, when they had the option, maybe they should take a course in another discipline, to make sure that they had the prerequisites, and saying that it would enrich their program. There was not enough space (in the criminology courses).When they couldn't get the courses they wanted, ... I would say, it's really right what you would like to take, but take whatever you can.

AN ADVOCATE

For any of the department's distance students, Sally will undertake an advocacy role:

... when something goes wrong, that's usually when I will intervene. I'm always phoning over (to the distance education office) to say, I need an incomplete for so and so, or this person has to have the exam put off until the end of the summer. When they get in a mess over something, a problem in their personal life or some other department's course they're taking and they can't get what they want out of the instructor there or whatever, I will try then to intervene and find out what the solution is, whatever's possible. I don't do too much of that, but I do it fairly regularly. I would do it for any student that asked me. But I conscientiously and consciously do it for classics majors. So yes, you help to push them

through the system as securely as you can. For things like medical problems or family problems, you have to make the system bend to accommodate the student. It's amazing how far the system can bend. All it takes is somebody like me. I look after about 50 people; thankfully nearly all of them don't want anything most of the time. At any moment if something emerges I can appeal to have grades removed, I can postpone completion of courses, I can do all kinds of things. And I'm reasonably good at all the regulations--- not brilliant, but reasonably good.

If a student-tutor problem seemed intractable, Monique would do what she could:

..If they can't approach the tutor marker because they hate them.... in a case like that I either tell them who the right person is to talk to, or if they have a complaint to write it to me, and I will talk to the course supervisor myself.

Sally also defines types of support that are beyond her field, particularly personal and career counselling:

...I get more nervous about what I would call the counselling end of things, but I feel you can probably not do any harm by listening, so I will listen. If it seems as though there's some real problem, I say things like, maybe the counselling services here can do something if you can get in here. I don't very often have to deal with that, but sometimes--- well just like you would with any friend, you don't leave them, but at a certain point you push them off in the direction of professional counselling. And I never have anything to do with career counselling.

A PILOT

By contrast, many students Monique dealt with had an ultimate career goal in mind, but were not always clear about how to get there.

For instance, we have a number of people in the RCMP, military police and people who want to apply to the regular city police force. They want one or two years and they recommend our program, so that's fairly straightforward. Also you have people who want to take a certain program because they want to upgrade their marks in order to get into the master's program. So that's perfectly straightforward.

But I make it clear, it's an academic program, it's not a professional program, warning them that there was no guarantee of a job. If they had an idea about where they'd like to work, I'd say, try to find out who are the people who do the hiring, in that particular department, agency, if you can, get to talk to them, bring in the program outline with you, see whether that type of training would be useful. Because you don't want to waste money, time and energy and find after two years of study you have not progressed in the right direction.

Students seem to be lost in a maze of possibilities that they don't always understand. We

have a wonderful system in B.C providing you know how to get from here to there. We have so many back alleys and back ways, entrances to programs, but unless you really know how it works ... you really have to be willing to take them a little bit by the hand and lead them. And you want to make sure that they don't take the wrong turn and waste time and money and energy. I think so much energy is involved in distance ed, it would be really sad if they lost that fire, maybe through some silly mistake that somebody else made on their behalf. So I always felt like a little tugboat or a pilot boat, leading people into the harbour. You really have to know your seas very well to guide them, then you deliver them, and that's where the program starts. Because so much is at stake, and we forget, from our comfortable jobs and desks, how much is at stake for students.

What difference does it make?

Sally describes how contact with students makes a difference:

You can turn people off as fast as you can turn people on. It seems to me that all teachers have as their prime responsibility to find that curiosity in students, to develop the kind of tools that they need to serve that curiosity, and to feel better about themselves. To be better people. I'm very moral, goodness me. I shouldn't say things like --- you think you're around here to help people be better. Some philosopher will stick his head around the door and say, "what is better?".

I think I do feel moral about it. I do feel I have a responsibility to try to model the kind of qualities that scholarship represents in the wider human context. Scholarship represents thoroughness and integrity and absolute honesty, and a whole lot of things. We serve them up as scholarly activity, but they are actually just a particular window on the human personality. And the values of good scholarship are just the values of a good human personality, in my opinion. You don't lie, you face truth, you do it thoroughly, that kind of thing.

Students indicate to Monique their response to finding a helpful advisor:

Students would pay for that phone call, during the day, sometimes from Nova Scotia, (5000 km away) spend five minutes with me, so obviously they felt they needed to. Most of the time, they were people who genuinely did not understand what they were supposed to do. They knew they wanted to be taking courses, and maybe they knew what they wanted to do with the program once they completed it, but they didn't know how to get started. There's a genuine need, why would they phone you otherwise--- they really want to know something. When a student asks a question, hesitantly, and I say, yes, I'm the right person, you hear a sigh of relief, especially if they've been bounced from person to person.

Sally also emphasizes the value of human contact, especially when in a field in which technology plays a part and isolation is always a risk:

It seems to me that the absolute basis for human beings is interaction. I find all this e-mail business rather scary, because I think computers enable people to evade direct interaction. I think it's a very bad business if we forget how to interact with others, and I think computers are contributing to that. People interact with the computer instead of with other people. I don't like the thought of people being perfectly happy learning whatever it is they want to learn off the computer or out of books. They should be interacting with someone. A lot of the valuable lessons go on a level of one human being to another- the most valuable ones.

And if you lose that, and for a lot of us, it's only too easy to lose it because we don't actually take to it like ducks to water, then you get the sort of nerds who just live more and more with their computers, or bookworms who live more and more with their books, because they can't actually remember how to interact with other human beings. And that's a bad tendency I would say. So it's bad news if people are given packages of information or material and they really glom on to them and get further and further away from other people. I think it's dangerous to take the personal element out of it. We've got enough of it as it is. The world is filled with ciphers and alienated persons.

For Monique, contact with students reminds us that the course cannot be regarded as just a package:

It's very theoretical when you prepare a course, and you say, those questions should be asked at this point in the course. But when you actually hear the students, you realize that they want a friendly guide. I would hate for students to become discouraged, take a course and find they can't keep up or have constant anxiety about keeping up, and it also destroys their personal life. .... I feel protective towards them.

If you're going to cut back student support, then you have to start thinking very seriously about whether you want to be in the business. Because all you're providing then is a guide, and you could become a totally self directed studies institution. It could become what my father had, which is fine for some people, but it requires determination. I don't think we're going to survive if we can't give students the right type of support. You need to have somebody at the end of the line who knows the answer, because you are going to get a lot of questions.

In summarising types of activities encompassed by the term "student support", Sally stresses the value of each of them:

It seems there are three things that I do. One is the academic, absolutely. It is a matter of interest in the Latin relative pronoun. Learning detailed, difficult, interesting stuff. The second is the sort of moral side; helping people learn to be better people, in the sense that they can do with greater self confidence and greater adherence to principles of integrity in what they want to do. And the third thing is sort of motivational, the business of keeping them at it, because it's so easy to become discouraged and despair and give up and get bored. And you only need a little bit of a push now and then and the push comes from knowing there's someone out there wondering what you're up to.

The eloquence of Sally and Monique clearly conveys the stuff and substance of what is entailed in student support, and why it is so important to maintain and to recognize as an essential component of all education, particularly distance education. Their experience holds an important message as new interactive technologies emerge and as distance education is regarded by some as cost-effective packaged learning for which student support is a merely an optional luxury.

The analogy of the jigsaw, although it emerged in another context, seemed appropriate as a description of what a distance learning experience should be: no one piece is more important than the others, but if any piece is missing, the picture is incomplete. Support provided by student advisors, tutors and counsellors is one such piece.

Sincere thanks to Dr. Monique Layton, whose musings on a sunny September afternoon prompted the idea for this article, and to both Professor Sally Haag and Dr. Layton for agreeing to share their thoughts on this subject.

Should Distance Education Be Learner-centered? A Critical Case History

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Introduction

The literature of distance education is already rich with incisive critiques of efforts to replicate "traditional" education electronically, and with catalogues of the sins of "Fordism" and "instructional industrialism", "rationally planned" mass delivery of packaged information to passive recipients. Frequently such criticism correctly identifies effective education as centered on the active learner, but it sometimes misses the creative potential of distance education. On the other hand, efforts to defend distance education have perhaps overstated the virtues of the "virtual" classroom as compared with the conventional lecture method. The relationships between means and objectives in distance education are still obscure when it comes to the impact of mode of "delivery" on educational outcomes. Further confusion results from the increase in the number of adults in degree programs, and the consequent attention (long overdue) to their learning needs. Much of the discussion now turns on what is being called "learner-centered education" and its implications for the restructuring of higher education. In an effort to clarify some of these points, I adopt here a particular definition of "learner-centered education", and then examine a case of its successful realization on a non-resident basis. My purpose is to isolate identify electronic "delivery" as a subset of <u>distance systems</u>, which promises to enhance distance learning, but carries with it certain risks.

Learner-centered education is educational experience deliberately directed to the educational needs and goals of individual students, as articulated by those students in conjunction with faculty and academic mentors.

The Graduate Program of Norwich University: A Case in Distance Education

The Graduate Program of Norwich University stands at the intersection of adult education, distance education and learner-centered education. Its history and its present practice make it a prime candidate for pioneering new paths in all three areas. In particular, since it operated on a non-resident basis over an extended period before the introduction of computer and video-based communication methodologies, it is possible to view it as a pilot project in distance education, and through it to identify issues and concerns which are now mistakenly connected with the electronic media, rather than with the distance between teacher and student which they and other methodologies seek to bridge. A look at the

Program in the light of contemporary theories of adult learning and distance education also provides us with a clearer idea of what essential educational values such a programs embodies.

In developing within a progressive philosophy of education, the Graduate Program of Norwich University became in fact what the current theorists hold up as a model of educational efficacy and appropriateness: it is learner-centered in being inquiry -based, which also implies that it encourages the cultivation of a critical perspective, in turn conducive to a transformative experience. Its approach emphasizes "connected knowing" rather than the passive reception of information. (See, for example
Belenky et al., 1986; Brookfield, 1987; Mezirow et al, 1990.) The descriptive account of the Program will indicate how process and policy embody these educationally valuable characteristics. The analysis and critique which follow will point to areas for further development, and to the role which electronic media can play in enhancing the Program.
The Graduate Program was established at Goddard College in 1969 and transferred to Norwich in 1981. The Graduate Program continues the basic commitments of Deweyean thinking: to the responsibility of each person for the consequences of their own decisions, to the testing of thought by action, to the integral relationship between learning and evaluation and to the centrality of interest as a factor in learning (Benson and Adams, 1987).

Qualified adult learners may earn the Master of Arts at Norwich in humanities, social sciences, education and interdisciplinary areas, in a non- resident, independent study format. A number of students also prepare for professional careers, (counseling is the most popular), integrating work in required areas with the thematic MA study.
Students each work with a core faculty generalist and a field faculty specialist, to develop and implement study plans focused on their own questions and interests. These study plans mark out focal issue(s), resources, methodologies and documentation as they are understood at the start of the process; the direction and approach is subject to change as learning takes place. Program literature list these criteria for the successful completion of a study:

> 1. Graduate-level knowledge of the scholarly literature
> and professional practice appropriate to the student's field of study.

> 2. Ability to write graduate-level exposition, including
> appropriate and consistent documentation of sources.

> 3. Ability to evaluate sources critically, to see the complexities and nuances
> of problems, and to assess opposing views with objectivity.

> 4. Ability to integrate scholarly theories and professional practice, or other
> experiential learning.

> 5. Awareness of the social context of the student's study and the social
> implications of the student's ideas.

6. For those intending to practice in applied fields, documentary evidence from supervisors of the student's professional competence.

7. Fulfillment of the study plan, including changes approved by the student's advisors.

8. Some evidence that the student's study has been integrated into his/her personal
growth and development.

9. Submission of a coherent, analytical and substantial final document that includes extended critical exposition. (Graduate Program Student Handbook, 1994)

Evaluation is carried out on an on-going basis by student and faculty advisors, and the final document must be accompanied, when presented for review, by a full set of written narrative   evaluations by the student and the core and field faculty.

In the original Graduate Program model (which has now been supplemented by a second option with ten weekend residencies a year), students typically do not visit the Vermont campus, except for the annual Colloquium. Core faculty travel to meet with them several time a year, and field faculty are usually drawn from the student's home community. During the rest of the enrollment period, faculty and students maintain their dialogue through mail and telephone. In this way, individualized distance education was delivered well before the introduction of the computer as means of communication.

Analysis
The Graduate Program is an anomaly from the standpoint of the most recent development of education. If we use as one framework of interpretation the schema put forward by Evans and Nation (1994b), we see that it has largely eluded some of the categories which do serve to characterize other programs. They cite David Hamilton who "employs a typology of pedagogies analogous to technological changes in the economy: handicraft, domestic, batch and continuous production." "Batch production was . . .the principle underpinning the batch mode of mass production . . which created systems of standardized schooling." "According to Hamilton, the twentieth century has seen the emergence of mass schooling akin to a Fordist production line within which students work through sequential and linear curriculum--itself a production line--at their own pace."

Although it is easy enough to recognize the "batch" methodology in traditional classroom practice, the central characteristics of what some theorists identify as classic "distance education" correlate much more with the "Fordist" category. Allan Hayduk, for example (1994), cites O. Peters approvingly, in describing distance education: "a method of imparting knowledge, skills and attitudes which is rationalised by the application of division of labour and organisation principles as well as by the extensive use of technical media, especially for the purpose of reproducing high quality teaching material which makes it

possible to
instruct great numbers of students, wherever they live."

Hayduk specifies that in "distance education, teachers and learners are separated in space and, frequently, time," that
in addition to the "technical medium" which carries the "educational content", "distance education students are provided with some form of two-way communication for purposes of clarification, feedback, motivational support". He further describes distance education as emanating from "a formal education organization rather than from an individual instructor", and specifies that it is constituted of "highly visible, public offerings open to criticisms (and adjustment) by professional colleagues".

The most significant stipulation is that " The content of distance instruction is carried by the materials, not by the tutor or writer," which allows for the separation of "course delivery" from "course development'. Here, of course, Hayduk is citing analyses which are more than 20 years old, and which seem to have been influenced by the pattern of education then evolving at the UK's Open University. Hayduk himself, along with other commentators whose priorities tend to be fiscal rather than strictly educational, recognizes that under this description, "distance education is the most industrialized form of education," and sees many "potential benefits" in this structure. "Quality control standards may be more easily and consistently applied" and (following Perry), "industrial style management may work best. . . ." Industrial production systems monitoring models appear to work well both for learner monitoring and management and registrarial control. They can also work well in monitoring the amount and the success of personal contact between tutors and students."

I would argue that distance between student and teacher does not necessitate an "industrial" model, and that successful alter-native approaches are already in existence. The description of a public (i.e. replicable), content-driven format, along with the de-valuing of the teacher-student relationship, contrasts vividly with learner-centered strategies. They can be shown to be more commensurate with the implications of the electronic or information revolution than a mass approach, which does not ordinarily give the learner any practice in developing strategies suited to new situations. The Graduate Program, for example, does not conform to the criteria of impersonality or the "management" of learning as a commodity, nor do the programs of the Fielding Institute or the Union Institute in the US. However, the absence of any universally accepted standards for measuring effectiveness in education makes it very difficult to definitively substantiate claims about outcomes.

In remaining Deweyean and inquiry-based, the Graduate Program regards the learner as active, and encourages a balance between theory and practice in every study, as well as the demonstrated development of critical and reflective skills. In being learner-centered, it is also responsive to individual learning styles and cognitive developmental needs. These are the qualities which theorists of (adult) education represent as most valuable (see, for example, Daloz, 1986).

Ideally, study plans and studies in the Program, focusing on questions arising from the

learner's own experience, emphasize process over product, and eschew prior conceptions of the precise nature of that process. In practice, this high individualism has both qualifications and drawbacks. Nonetheless, an inquiry-based method is surely better adapted to learning to navigate the Internet, for instance, than is didactic or prescriptive in-struction. In this setting, new media for communication and for accessing information remain just that--<u>means</u> toward the end of knowing--rather than hi-tech weapons in the armamentarium of people who don't believe that learning takes place voluntarily.

<u>Areas for Development</u>
Three areas stand out in the Graduate Program system as
particularly eligible for attention:
1. the increasing reliance on text-based documentation of learning;
2. the sense of isolation expressed by many students;
3. the absence of systematic procedures for assessment of learning outcomes.

Heavy reliance on text in the present Graduate Program is partially a consequence of limitations inherent in the older distance methodologies, and, perhaps inevitably, of conventional thinking on the part of faculty.

Originally, it was possible for students in the Graduate Program to demonstrate their learning in any ways appropriate to the tasks undertaken. While a substantial final piece of writing was always required, conforming to the standards of good scholarly writing, products in other media often formed a central part of submissions. Performances, videos, audio tapes, slides and so on were common, with the text including comment, analysis and explanations. The problems of library storage and access, as well as the difficulty of review by faculty who are themselves frequently dispersed, have eroded this original openness of the Program to evidences of learning which are not written. At present, the <u>de facto</u> expectations for final work are clear in the change of terminology; "final product" is now "final document", and the criteria for graduation (above), make no mention at all of non-text elements of student work.

Students in the Graduate Program often speak of their feelings of loneliness as they pursue their work, and of missing contact with student peers. One can argue that in entering an independent study Program, they are knowingly committing to working on their own, i.e., that isolation is a concomitant of individualized independent study, rather than of distance <u>per se</u>. But we know enough about learning and the "social construction of knowledge", to concede that being all alone may not be conducive to the best results. It is also worth remembering that the very cultivation of reflection which is built into the process described will bring learners to a more conscious articulation of their learning needs. To the extent that distance education is individualized, and is anything other than the transmission of packets of instruction to passive clients, singly or in groups, this is an issue which needs resolution.

One approach to it is the addition of residential components to independent study and distance programs. The jury is still out on whether such components are <u>necessary</u> for

optimizing learning. Some theorists seem to lean in this direction:

"We have to continue to encourage distance students to form learning groups where students can come together frequently enough and develop sufficient comfort and trust with each other to enjoy genuine dialogue and cope with the discomforts of learning (Burge and Haughey, 1993).

Other writers have made vehement efforts to show that proximity can in fact be pernicious. Gillard (1993), in an effort at "deconstructing contiguity", asserts that "Contiguous education privileges the voice and so conceals the availability and effectiveness of other media , in the service of an ideology of control". He seems to rest his argument, however, on the dubious equation of "contiguity" or proximity in the educational setting with the traditional lecture method.

The serious investigation of the merits of "distance" and residential modes of education, and of their various possible combinations, depends again on the development of common measures of success for learning outcomes. In the Graduate Program, which now offers both non-resident and low-residency options, the claims for success of either format, in itself or in comparison to the other, are still based on anecdotal evidence. The final written program and self- evaluations required of students are entirely open and unstructured, as are those of their advisors. Apart from the graduation criteria, there is no system of standards or benchmarks for interpreting either the work submitted or the evaluations, so faculty reviews are based upon a very general understanding of academic expectations and on the oral tradition within the Program. To date there has not been any effort at follow-up with graduates to develop a base of information which might affect faculty work with their individual students.

Conclusions: the role of the new technology
Some conclusions come to mind immediately. If we implement a conception of distance education which is learner-centered, rather than content- or medium-driven, then we still need to substantiate convictions about the efficacy of our methods and their success for learning outcomes. And this in turn implies that we agree on the objectives for learners, and that we can determine whether or not they have been accomplished. At that point, the research would begin with the collection of empirical data. The new mediating technologies, computer, video, audio, and especially those which are interactive, are promising when
they are not overwhelming. Burge and Haughey (1993) enter a timely caution when they point out that "The technology to connect learners is available but our field requires wider recognition and application of the skills and assumptions needed to use these connections for the dialogues and silences of transformative learning. We have to learn to make the hardware transparent, and to refocus our facilitation techniques on listening and responding rather than talking and directing."

The three principal functional aspects of electronic technology--for accessing information, for communicating and for storing and presenting records of work--all do have direct

relevance for
addressing the areas cited above as needing attention in programs like Norwich's Graduate Program. There is obvious potential in the Worldwide Web and Hypertext applications for allowing students to access and integrate images, sounds and so on, into their text and their thinking, and to create of multi-media "products" (e.g. electronic portfolios) as demonstrations of learning in concepts, skills, information. Faculty need to "restructure" their thinking and behavior, as Alan Guskin (1994) has pointed out, to facilitate best practice in utilizing these new tools.

How electronic technologies can help us address the real needs of students for interaction is not yet clear. We know
that we can connect them with faculty and with each other, but
we don't know yet whether learning will be enhanced in this
virtual way as much as it might be when they are present in the same place. More experience and research are indicated here.

Perhaps the hardest task is that of devising assessment techniques which will measure what needs to be measured in a way that satisfies enough educators to make it useful to them. If education is to be "transformative" in any meaningful way, then having defined what that means, we must be able to show that it has happened, for adult learners or for any other segment of the population. Guskin (1994) says "If our primary focus is on student learning . . .student assessment must focus on the individual student and what he or she has learned." But the convenience of any particular assessment procedure or "delivery" system must never shape the task, nor must "productivity" be
understood to mean anything but how much a student really learns.

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WHY COMPUTER CONFERENCING MAY HELP STUDENTS MORE THAN FACE-TO-FACE TEACHING

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This paper supports the conviction that asynchronous computer conferencing (CC) enables a very learner-centred approach to teaching in higher education, and suggests a choice of two ways of organising courses to benefit from it.

The term "learner centred" can have at least two valid interpretations. It may refer to
a. **"Learner power"**, ie to learning situations in which the learners are, in current jargon, empowered to take control of their learning to the extent that they guide the teacher towards their own goals and interests, rather than passively following a pre-set syllabus that they have had no hand in devising.
b. **"Learner focus"**, ie classrooms in which the teacher does not dominate, but creates an environment in which learners have the opportunity to contribute, to talk to each other, and to work in ways that suit them best.

I am using CC for distance education, and find that this medium is well able to accommodate both types of learner-centredness, though my own experience inclines me more towards b. I shall discuss a. briefly before moving to a review of my own courses falling within the b. model.

a. Learner empowerment.

A persuasive argument for the contribution of CC to this kind of learning is made by David McConnell in his new book, _Implementing Computer Supported Cooperative Learning_ (Kogan Page 1994) and I shall use it for this discussion. In the book (p.20ff) a contrast is made between two views of cooperative learning which are very similar to my distinction between "Learner focus" and "Learner power". MCConnell suggests that course design factors such as
structure
teacher control
moderation of learning
learner motivation
learning content
assessment
can be placed on a scale. At one end is cooperative learning as part of an overall curriculum involving tasks that students have to work through. At the other end is "a form of open, negotiated learning... (which) emphasises internal moderation by learners themselves". MCConnell (1994, esp. Chapter 5) gives an impressive account of this second type of learner powered cooperative learning, and argues that the CC medium contributes to its success in his courses particularly in regard to "time" and gender issues. He shows, for instance, how women are freer to make

a full contribution within the neutral context of text-based communication, where their gender is not as prominent as in face-to-face (f2f) contexts.

A more significant issue, however, is "time" in group dynamics. F2f meetings are limited by the need to travel to, and return from, a defined place - a room that has to be booked for one or a number of fixed periods. By contrast, asynchronous CC allows all participants to arrive and leave at times of their own convenience. Further, so long as the computer system is up and running, it is open for continuous use indefinitely, so that there is "little if any sense of loss of relationship between participants working cooperatively in online groups since they are constantly relating to one another. Discussions are often prolonged, and participants can use the time to dig deep into issues". Perhaps most important, since all the discussion in permanently held in the computer, participants "can reshape conversations on the basis of their ongoing understandings and reflections. They can revisit 'old' conversations and restart them" (op. cit. 67-68).

McConnell cites students' comments about the downside of such continuity, however. It is extremely time-consuming: "You know, its just sort of eaten into my whole life" said one participant, who found that he felt he was a member of a never-ending discussion to which he had to keep on contributing. My own students in the Certificate in Online Education and Training [1] have made similar comments about open discussion in that course, and so have many other CC users. This is usual called "overload", a term referring explicitly to the large volume of discussion that may appear in a CC, but implicitly also to the attendant pressure to contribute to it. One of my students has commented: "If others have so much to say, then I had better say something too; but that will enlarge the conference even more, and I'm not sure if other people will appreciate me doing that, especially if I dont have anything brilliant to add".

In the light of my experience with two very different courses described below, I believe that users have a feeling of overload and uncertainty when
(i) a conference is largely left to them as an open discussion area, and there is no specific indication to them of what or how much they need to say;
(ii) there is no arranged closure, ie point at which a discussion may be felt to have reached its goal, as well as a timed ending to the conference.
Their reactions range from becoming highly motivated and submerged in the CC, to making hopefully sufficient minimal contributions, or even remaining silent readers only. Indeed, in one such open discussion are in my courses, there is constant concern among the participators about how to provoke the silent ones to come on board. In the literature, the term "lurking" has been coined for mute CC participation.

Moreover, in a completely flexible and unstructured discussion, anyone can comment as much or as little as he wishes on any point. Some may go off on tangential matters; some may only comment on other people's comments rather than putting in original material of their own. Messages are added into a CC in chronological order and this is quite randomly dependent on when people log on.

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[1] A 2-term part-time Institute of Education course for educators: Problems and Principles in the Use of Computer Networks for Course Delivery. It is run by computer conferencing, using CoSy software.

So, if there are various issues under discussion (even if linked quite tightly to one central theme) and a number of people add their comments at random, a comment to a point made in Message 2 might actually get in as Message 9, the intervening messages being from other students about other matters.

Overload and randomness in discussion are not ideal for courses where students are struggling with new information and preparing for traditional assessment. I am more interested in improving the use of CC for curriculum-based learning contexts, which are still the most common model of learning within higher education, rightly or wrongly. The next section describes a mode of course design that largely overcomes the problems.

b. Learner focus

In my Masters degree[3] I believe I have constructed a "virtual classroom" in which learners have the opportunity to contribute, to talk to each other, and to work in ways that suit them best, without the above problems associated with free and open discussion..

Course design factors
I have designed the course to be the CC equivalent of the established f2f MA. For each module of the traditionally taught MA, students attend approximately fifteen 3-hour sessions (with a 1/2 hour break in the middle)- roughly 40 hours. I have tried in both of the following two ways of paralleling these sessions in CC :

f2f 3-hr session`	CC
1.	
Session 1	Week 1
Session 2	Week 2
Session 3	Week 3
Session 4	Week 4
etc.	
OR	
2.	
Session 1	] Weeks 1 and 2, ie Both
Sessions running	
Session 2	] at the same time over 2
weeks.	
Session 3	] Weeks 3 and 4 ie Both
Sessions running	
Session 4	] at the same time over 2
weeks.	
etc.	

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[3] The MA TESOL (Teaching English to Speakers of Other Languages), a 2-year part-time degree based on the long-established traditionally taught degree in the same department of the Institute of Education. It is taught by computer conferencing using CoSy software except for 2-day meetings at the start of each term.

I think the latter was marginally more successful, because it gave students more flexibility in organising their time for each Session.

Closely connected with time-table management decisions in CC are questions of how to deal with
(i) the lack of lecture input and
(ii) structuring the work to be done for each session.
My goals were to
- organise the subject and the students' work into small manageable chunks
- and give each student a clear idea of what his/her contribution needed to be.
At the same time I wanted to leave students the freedom to discuss the course issues as much or as little as they wished.

To compensate for lack of lecture input, I either
a. loaned each student an edited version of some videotapes of the some of the key f2f lectures, and linked each one to a session;
or
b. used existing textbooks and articles, setting specific reading(s) for each session.

The students' work was structured on the model of f2f workshops. Students worked in two groups of 11; so I devised 11 tasks for each session, and allocated one to each student. The answers to those 11 tasks, taken together, bird's eye view of the chunk of content to be covered in that session.

Students completed their own task for each session, and frequently commented to others, asking for help with their own tasks or congratulating each other on the excellence of the answers put in. The impression is one of very supportive collaborative endeavour.

My role as lecturer/tutor has now become very different from that of the lecturer in the f2f class. I cannot control the interactions once they are set going, but have to choose how to comment on the answers to tasks as they appear in the conference. Comments on all of them would make the conference huge, but only to comment on some would run the risk of favouring or criticising some students. My solution was to comment on a student's answer only if the student asked for help or if there was a misunderstanding that needed immediate clarification. Then, at the end of each session I provided a general overview of the subject, with my comments interwoven.

Of the various methods I have used or closely observed in CC, this has been the most highly rated by the students. They know what is expected of them, enjoy the collaboration, and in most cases all the allotted tasks are completed. I should add that in comparison with their peers in the traditional MA TESOL, the CC students have thus far (the course is not yet completed) performed very well indeed in both examinations and coursework.

Avoiding overload and randomness

Questionnaire replies from students on my Masters degree indicate clearly that they feel cc takes less time than attending part-time classes would. They never complain of overload or of not being able easily to follow discussions in the conference. In my view this is because the discussions, though open, are structured.

To illustrate the different effects of unstructured and structured cc discussion, it is interesting to consider some rough statistics from the MA with my other course, the Certificate[2] where a large section consists of unstructured open discussion. I have compared three weeks cc in the Certificate with three weeks in the MA. There are 50 students in the former, 22 in the latter.

The comparison is by number of words, and the goal is to compare
a. the quantity of words that have to be read in a typical CC with a presumed quantity that have to be listened to in an equivalent traditional seminar, and
b. the different reactions of the two groups of students to the different cc course management methods.
I assume, for the sake of argument, that seminar talk is on average at a rate of 150 words per minute.

Certificate - 50 students + 2 tutors
Over a 3 week period, the total number of words produced by 50 students (about 75% of whom contributed) and two tutors was as follows:

i. In a plenary area,

                            33,000wds.
at 150wds p.m. this is   3 hrs 40mins of traditional seminar talk.
They therefore had to read the equivalent of 3 hrs 40mins of traditional seminar talk.

ii. Students belonged both to the plenary area and to one of four sub-groups. Taking the number of words in each individual sub-group + the number of words in the plenary area, the groups produced:

1	47,500wds	= 5hrs 16mins
2	38,460wds	= 4hrs 16mins
3	38,600wds	= 4hrs 18mins
4	41,385wds	= 4hrs 33mins

If we assume that a seminar is about 2 hours long, two groups did the equivalent of two seminars over 3 wks. while the others did somewhat more.
They therefore had to read the equivalent of about 2hrs or slightly more of traditional seminar talk.

MA - 22 students + 2 tutors
Over a 3 week period 22 students (all of whom contributed) and 2 tutors produced
i. In a plenary area

                            6426wds

_____

2 See above.

at 150wds p.m. this is   40mins of traditional seminar talk.
They therefore had to read the equivalent of 40mins of traditional seminar talk.

ii. Students belonged both to the plenary area and to one of two sub-groups.
Taking the number of words in each individual sub-group + the number of words
in the plenary area, each group produced:

1. 26354   = 2hrs 58mins
2. 24355   = 2hrs 38mins

If we assume that a seminar is about 2 hours long, Group 1 did the
equivalent of one and a half seminars, while Group 2 did about one and two thirds.
They therefore had to read the equivalent of between 2 and 3 hrs of traditional
seminar talk.

The two courses compared
i. Taking the most productive groups from each course, and
ii. adjusting the MA figure to what the output would be for 50 instead of 22
students:

Certificate: **MA:**
    47,500 wds   59,895wds
    5hrs 16mins   6hrs 35mins

I take it that neither student cohort would consider the seminar time equivalents
excessive when spread over three weeks as the CC was. Yet the MA students do
not complain of overload, even though they produce more text.

This raises 2 questions:
(a) Why does the same number of words lead to overload in written text, but not in
a live f2f context;
(b) Why does a larger number of words in CC not present overload problems to
the Ma group?

The answer to (a) has to do with the readability of the CC and also with our
experiences of and attitudes to reading. Text on screen is far less readable than on
paper. Even on paper, the arrangement of the text, ie broken up by headers, may
reduce its readability.
Another important factor relates to the way we use or fail to use appropriate
reading strategies such as scanning and skimming[4] .. People who complain of
overload in cc may be behaving like new students in traditional classes who try to
write down every word when they first attend and only later learn to screen out
less important information. That is, new cc users may be paying far too detailed
attention to everything in the conference.

The answer to (b) is, in my view, because of the management of the discussion in
the MA. We are all familiar with established procedures for management of
communication in situations where things need to proceed smoothly, e.g.

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[4]. Windows-based conferencing systems like FirstClass or TeleFinder are even less readable than CoSy or
Caucus because they present every message in a separate window. Scanning, skimming, moving backwards
and forwards through text, are all impossible.

committee meetings. There is a preset agenda, the chairman decides who can speak when, speakers have to keep to the point, etc. Even where the conventions are not explicit, most communication is conventionally controlled. For instance, in a restaurant, or at a private party or in a lecture or seminar, we expect certain procedures to take place in a certain order. Clearly, exactly the same routines of turn-taking and topic management used in f2f discourse will not work in CC because it is asynchronous, and there is no way of interrupting, so that turns are taken in chronological order of logging on.

Suitable conventions for CC are still being developed. But the important point is that one can set up conferencing to be loosely or tightly structured; the medium is adaptable to many possible conventions of use. My course design for the MA gave the discussion structure without stopping students from presenting their own points of view.

Recently, in order to try to remove the overload problems in the Certificate, I changed the conventions for a period of three weeks. Groups reduced from 18 members to 8-12 and were asked to follow these rules:

1. Messages must have a clear heading to indicate what they are about.
2. Messages must be limited to 20 lines.
3. Those 20 lines must be split into short paragraphs.
4. A message should make no more than 2 points.
5. Messages must be properly formatted

I also summarised a set of criteria culled from a recent bulletin board discussion:

VALUED CONTRIBUTIONS
-are orderly and presented as a well constructed debate
-avoid flaming[5] or provocative comments
-offer a means for others to contribute
-show commitment to continuing and progressing the debate by stimulating others
eg by asking for clarification
          by asking questions
          by asking for definitions
          by careful use of "devil's advocate" type role
-use clear expression
-bring new insight
-relate personal / anecdotal experience
-demonstrate openness
-have confidence to admit lack of understanding
-make use of humour
-show enthusiasm

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[5] Undue emotion expressed in writing, likely to cause more offence than in f2f contexts because there is no easy way of mitigating it.

UNHELPFUL CONTRIBUTIONS
-are long-winded and/or repetitive
-stray off the subject
-are too academic in tone (could they also be too casual??)
-use inappropriate use of humour
-have offensive language
-are slight, do not add to the discussion
-have poor presentation and spelling or grammar, though a degree of typing
          errors is normally tolerated
-do not meet agreed deadlines or responsibilities

There was much favourable comment, because these new conventions did bring about an improvement in readability. But the mode was still unstructured open discussion, the its attendant problems I have discussed above

Conclusions

What I have concluded from my experience in f2f higher education over 25 years and with CC for 7 years is that learning a new subject has to be organised somehow. I also have no doubt that collaborative learning is beneficial and appealing to the majority of learners. In CC, successful collaboration occurs when discussion is structured so that groups are kept small in participant numbers and range of content, and people know fairly precisely what they have to do.

What CC adds to f2f learning is the opportunity for all students
-to contribute,
-to talk to all the others
-to work in ways that suit them best.
Given the well-rehearsed constraints of f2f higher education, none of these benefits is available to traditional learners in the classroom or lecture hall. Nor is there any indication that f2f students find much time to work together outside class, certainly not with a large group of fellow-learners. They indeed complain that there is not even time or opportunity to get to know each other. My CC students, on the other hand, feel that they know each other very well indeed.

I know that more and more teachers in higher education are contemplating cmc as part of their delivery mode. I would recommend that they do not allow themselves to be discouraged by negative comments about cc that are based on observation of open discussions. With sensible management cc is an excellent medium.

APPENDIX

This is a summary of points made in discussion on the Certificate course in 1995.

ADVANTAGES OF CMC

DISTANCE EDUCATION BENEFITS
- work at home
- no distractions
- comfort

PERMANENT TEXT RECORD OF DISCUSSION

ASYNCHRONICITY
- own time management easier
- have time for reflection before putting up messages

COLLABORATIVE LEARNING
- enables group activity and keeps record
- teaching learning are by group efforts
- allows different sizes/mixes of groupings
- compensates for the distance

ACCESS
- good for the handicapped
- good for working people
- dont feel isolated
- f2f students have less time to spend with each other than we do in cc

REACH
- national
- international
        boundaries crossed

FLEXIBILITY IN LEARNING BEHAVIOUR
- can choose to read texts, participate or lurk, draft responses, leave time between activities, mull over, etc

SECOND LANGUAGE SPEAKERS
- gives extra time to work in second language for those who are slower

AFFECTIVE FACTORS
- no emotive problems as in f2f

DISCOURSE
- no turn-taking problems
- no interruptions

LEVELLING
- loss of status distinctions
- loss of Teacher's authoritative presence

PUBLIC + PRIVATE FORUM
- can communicate with whole group
- can communicate privately with any individual

DISADVANTAGES OF CMC

TECHNICAL
- Connection problems
- Typing skill needed
- Conferencing system to learn
- Failures, glitches, gremlins. etc.
- cost of equipment

ASYNCHRONICITY
- other people get in before you with a message

COLLABORATIVE LEARNING
- difficulty of getting right size/mix of groups

LEARNING
- have to wait for responses   and feedback

LEARNING CURVE
conferencing has to be taught, which can be extra urden in an
already full course
- Some students have previous bad experiences wit computers
- teachers need to be well prepared

FLEXIBILITY IN LEARNING BEHAVIOUR
- have to manage how/when to respond
- have to spend time to think first then write?
- having flexibility can be a disadvantage compared with having to attend set time classes

AFFECTIVE FACTORS
- lacks emotive potential of f2f

DISCOURSE
- not so many people are comfortable with writing
- reading onscreen is not comfortable
- needing to print out is time-consuming
- conciseness in writing needed
- negotiating way through the messages is difficult
- great quantity to read
- no non-textual communication signals

ISOLATION
- still not as good as f2f

NETWORKING
- brings people together

TEACHING METHODS
- forces tutors to reflect on their methodology
- needs good structure

REFLECTION
- cmc encourages reflection by
students
- on why they are studying a course
- on their previous experience and current knowledge
- on their learning strategies

tutors:
- on the teaching methods used: - heuristic quality of
CMC
- on students' responses to the material

both students & tutors:
- on the content and aims of the course
- on the authority eg the knowledge presented within
it.

ROLE IN EDUCATION
- one option among many
- can be combined with other modes

PARTICIPATION
- hard to motivate everyone to take part
- hard to check student participation
- hard to assess student participation

Implementing Student-Centred Learning: The Role of Learner Profiling

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Abstract

There is a growing body of research that suggests that student-centred approaches to higher education constitute an effective means for the achievement of higher quality learning. This paper argues that successful implementation of such a programme requires an awareness of individual students' ability to learn before implementation takes place. A methodology is put forward that enables the construction of a profile that provides a comprehensive analysis of individual learning competence.

Introduction

It could reasonably be argued that in adopting a more *open* approach to education, as opposed to a less flexible didactic approach, an institution is, by implication, requiring that its students are more flexible learners. If one accepts this suggestion, together with the view that educators' awareness of students' learning ability before instruction is of key importance, then the need for some form of pre-assessment of learners' ability to learn under such approaches as those highlighted above, becomes increasingly paramount. Particularly given that some argue that the most important factor influencing learning is what the learner already knows (Ausubel 1978, Winne and Marx 1980, 1982). By recognising the need for an awareness of levels of pre-higher education learning skills that individual students possess, and the orientation that individuals have towards both learning and their course of study (Beatty and Morgan 1992, Mathia 1978, Gibbs 1980), institutions will be able to provide more appropriate learning environments. This will encompass a move away from the current surface-based methodology to be found in many universities, in which the acquisition by the learner of factual knowledge and related skills takes precedence, and a move towards the learner developing conceptual understanding (Martin and Saljo 1980). A shift that is necessary given that effective learning constitutes more than simply reproducing a body of knowledge at the end of a course of study (Ramsden 1983).

Student-Centred Learning: A Need for Definition?

There is currently a wide range of terms that are used within educational research to describe a group of approaches addressing the problem of student learning. These terms are constantly to be found in the literature on learning, and are also constantly interchanged within that literature in an almost *ad hoc* manner, suggesting that they are not perceived as constituting truly distinctive methodologies, but are simply regarded as variants on a single theme. i.e. a move away from a pedagogical doctrine. This apparent lack of uniformity in agreed usage of terminology within this field has lead to what some have called the *use and abuse of language* (Rumble 1989), where one has witnessed the emergence of a *surfeit of synonyms* (Robbins 1988) covering advances in learning methodology. These being;

experiential learning (Keeton 1976, Kolb 1984, Weil and McGill 1989), *self-directed learning* (Knowles 1975, Hammond and Collins 1991, Candy 1991, Caffarella and

O'Donnell 1989, Brookfield 1985, Long 1990, Kasworm 1988, Taylor 1986, Spear and Mocker 1984, Piskushra 1993), *independent learning* (Dressel and Thompson 1975, Boud 1981, 1988, Henderson and Natheson 1984, Bonthius, Davis and Dushal 1957, Moore 1973), *action learning* (McGill and Beatty 1992), *open learning* (Paine 1988, Lewis and Spencer 1986, Rumble 1989, Coffey 1977, Hodgson 1987), *student-centred learning* (Stephenson 1987), *distance learning* (Moore 1973), *problem-based learning* (Boud and Feletti 1990, Engel 1990), *reflective learning* (Boyd and Fales 1983, Schon 1987), *self-regulated learning* (Zimmerman and Schunk 1989, Carver and Scheier 1981, Corno 1986, Henderson 1986, Wang and Peverly 1986),).

.Whilst proponents of these approaches may claim differing degrees of distinctiveness, it is often easier to identify common elements amongst them rather than any unique feature. In the context of this paper, student-centred learning is taken as referring to any approach to education that seeks to place the locus of control with the learner, and places the needs of that learner higher in the educational priorities hierarchy than is typically found within institutions of higher education (Cross and Ransome 1977).

Traditional pedagogical models of higher education revolve around didactic tutor-led approaches that, whilst being effective in information provision, are less effective in promoting *effective learning*, or even conceptual understanding. Whilst accepting that within the current higher education framework students do indeed need to learn how to play *the academic game* of assignment and exam success (Wright 1982), higher education should also be concerned with the quality of the learning that takes place.

The Need for Learner Assessment

The suggestion is that in order to be able to operate effectively within a student-centred paradigm, the starting point should be an assessment of the individual through a comprehensive analysis of the key factors that affect learning, prior to any formal educational intervention. Although any such assessment must be capable of being operationalised within the constraints imposed by a system that is increasingly geared towards mass higher education. The generation of such a learner *profile* will then facilitate the negotiation and joint development of an appropriate learning strategy to foster learner empowerment, and so permit students to be better able to tailor flexible education programmes to their requirements, so optimising the quality of their learning experience. Although Ramsden (1985, p.65) suggests that educators are confronted with a paradox when attempting to improve students' learning. Specifically he suggests that to improve student learning one must address the teaching and assessment to which they are exposed, but to improve teaching and assessment one must address student learning.

By carrying out learner pre-assessment, educators should be in a better position to deliver programmes based around a teaching structure that is in line with The Warnock Committee's recommendation that teaching should be responsive to students' needs (1990, p. 35). Without this pre-assessment, there is a real danger that students, when confronted by methods that may be diametrically opposed to their actual learning requirements, will become disillusioned and increasingly anxious, possibly resulting in the adoption by them of learning strategies that may effectively preclude deep learning (Marton and Saljo 1976, 1983), and understanding (Entwistle and Wilson 1977). Although it must be stressed that by giving students greater responsibility for their own learning in this way, evidence indicates that students' performance may improve **or** decline (Gruber and Weitman 1963), and there is much evidence that attempts to implement such programmes have resulted in adverse student reaction (see for example,

Dunbar and Dutton 1972, Eglash 1954, Neel 1959, Beach 1961, Miller, Morphet and Saddington 1986).

The Components of Learning

If one accepts that some form of measurement of learners' ability to learn is indeed a key component of effective programme design, one must then address the problem of identifying exactly what it is intended to measure, and how to carry out that measurement. From the available research evidence, it is possible to identify several contributory factors that affect learning;

* learners' motivation to learn (Ausebel 1968, Borger and Seabourne 1969, Strang 1982, Open University Study Methods Group 1981, Long 1993)

* the level of anxiety experienced by the learner in learning situations (Entwistle and Wilson 1977, Fransson 1970)

* the learner's self-confidence (Perry 1977, Jones and Toner 1978)

* the degree of learner autonomy (Carver and Dickenson 1977, Rogers 1969, Cunningham 1987, Brown and Atkins 1988, Dearden 1975, Krimerman 1972, Knowles 1975, Dittman 1976)

* the size of the learning group (Hudelson 1928, Siegel, Adams and Macomber 1960, McKeachie 1963, Dubin and Taveggia 1968, Kulik and Kulik 1979)

* the method of assessment used (Elton 1982, Newble and Jaeger 1983, Rowntree 1977, Thomas and Bain 1984)

* previous knowledge held by the learner (Winne and Marx 1980, 1982)

* the degree of learner involvement in the learning process (Graves 1993)

* the approach to learning adopted by the learner (Marton and Saljo 1976, Ramsden 1987, Marton 1988, Fransson 1977, Marston 1976, Newble and Clark 1986, Coles 1990, Meyer and Muller 1990, Mathia 1978)

* the nature of the programme's curriculum (Coles 1985, Dahlgren 1978)

* the method of teaching used (Weinstein 1970, Dubin and Taveggia 1968)

* the learner's level of studying ability (Rowntree 1970, Gibbs 1981, Svensson 1977)

* the nature of the learning environment (Bates and Rowland 1988, Fraser et al 1987)

* the learner's learning style (Keefe and Ferrell 1990, Honey and Mumford 1980, Smith 1982, Gregorc and Ward 1977, Keefe and Languis 1983, Claxton and Ralston 1978, Partridge 1983, Curry 1983, Fizzell 1984, Riding and Chema 1991)

* the role of the lecturer (Parlett et al 1974, Bliss and Ogborn 1977, Entwistle and Percy 1974).

Although there is some debate as to whether the majority of these factors should indeed be regarded in isolation as prime considerations in investigating learning, collectively they highlight the factors that one needs to be aware of, and they also serve to illustrate the complexity of the problem encountered in addressing student learning. At present, the assessment of learners' ability to learn is undertaken almost by default through the imposition of course entrance requirements. However, this would seem to indicate that higher education is perceived as being simply more education, in that examinations taken in pre-higher education institutions are used to measure students' learning ability. Is such a view correct?

Learning is necessary, but is not part of what is meant by higher education. What counts for the sake of higher education is the student's ability to understand what is learned, or what is done, to conceptualise it, to grasp it under different aspects, and to take a critical stance in relation to it.

(Barnett 1990: p. 150)

The Measurement of Learning

Given the wide range of factors that need to be taken into account when attempting to evaluate learning, it is questionable whether it is actually possible to measure an individual's ability to learn using a single instrument. At a more fundamental level, it is debatable whether it is possible to measure learning at all, given the wide range of definitions that exist as to exactly what constitutes learning, and perhaps more importantly, what constitutes effective learning. This would seem to indicate that the effective measurement of learning requires a multi-dimensional approach so as to encompass the range of factors identified previously. It is also suggested that it would be inappropriate to concentrate solely on either quantitative or qualitative measures. An over concentration on quantitative measures means that; it is likely that subjects will, albeit perhaps unwittingly, concentrate on recalling learning projects that appear to meet the expectations reflected in the researcher's methodology; the measures used may intimidate the subjects and produce atypical results; the actual quality of the learning is overlooked; there may be a rejection of subjective, anecdotal, and impressionistic information that may actually be more relevant to the investigation of learning. (Parlett and Hamilton 1978). Clearly, an effective measure would therefore be constructed from both a quantitative and a qualitative element. An approach that has been endorsed in earlier studies (see: Engle-Clough 1984, Whyte 1981, Daniel and Kelly 1976, Denicolo 1984).

The Learner Profile

The profile is constructed from five elements:

1). Honey and Mumford's Learning Styles Questionnaire

Developed from the work of Kolb (1976), the Learning Styles Questionnaire (LSQ) is a widely used instrument that enables one to assess through a self-completion questionnaire, the degree of preference that an individual has for the four learning styles identified; *activist, theorist, reflector* and *pragmatist*. Each style corresponds to the four

stages that Kolb identifies as constituting the learning cycle; *concrete experience, observation and reflection, formation of abstract concepts and generalisations, testing implications of concepts in new situations.*

2). Down's Learning Blockages Questionnaire

Initially developed as an aid to trainers, the questionnaire is a self-completion instrument comprising a range of statements to which individuals indicate their degree of agreement or disagreement on a five point Likert scale. The statements were collected from a group of learners who were asked to identify what prevented them from learning. The scores are grouped in four categories; *learning skills, distraction/concentration, worries and fears about learning, learning from others.* The higher the score, the greater the degree to which that particular blockage constitutes a barrier to effective learning.

3). Guglielmino's Self-Directed Learning Readiness Scale

A 58 item self-completion questionnaire in which respondents indicate their degree of agreement on a five point Likert scale with a list of statements regarding their attitude towards learning. The score indicates the learner's readiness to self-direct their learning in situations where such an opportunity is forthcoming. This is one of several instruments that have been developed to measure the ability of individuals to control their learning; The Internal-External Scale (Rotter 1966), Personal Orientation Inventory (Shostrom 1964, 1974), Autonomous Leaner Index (Ferrell 1978), Tennessee Self-Concept Scale (Fitts 1965). It is important to bear in mind that the scale is a measure of the degree to which individuals perceive themselves to possess skills and attitudes associated with self-directed learning. It is not a measure of actual behaviour.

4). Entwistle's Approaches to Learning and Studying Questionnaire (1993 version)

A self-completion questionnaire in which individuals rank their level of agreement on a five point Likert scale with a range of statements on learning. Originally developed at Lancaster University, the questionnaire has been substantially revised to take into account recent research into student learning. Scores are ccalculated in five categories; *deep approach, strategic approach, surface approach, lack of direction, academic self-confidence.*

5). A one hour semi-structured, one-to-one interview

The interview structure was developed by the author following a search of the literature on student learning, and is included in attempt to determine the extent to which conclusions that can be drawn from the four instruments identified above, correlate with the student's own views. The structure was piloted with two groups of undergraduates, and revised and piloted once more in the light of the data generated.

The data generated can then be used to develop an in-depth learning profile of individual students. Unlike other formal approaches to learner assessment, such as examinations, the profile does not actually assess what learners' know, but rather their ability to learn, and their approach to learning. This information can then be used in the development of appropriate learning strategies for individual students. It should be stressed that the

profile is intended to aid lecturers in jointly devising with individual students a learning plan of action. The locus of control remains with the student. Through the identification of the individual's learning strengths and weaknesses, the educator is placed in stronger position to empower students to actively take greater control and responsibility in learning situations, by taking control of their own learning. The profile may also serve to assist in the development of appropriate learning activities taking into account the composition of a particular cohort of students.

Discussion

In addressing the problem of effectively implementing student-centred learning, the use of learner profiling provides a potential solution. However, given the wide range of factors that one has to consider in examining learning, by implication one needs to utilise a range of instruments in developing an appropriate profile. Clearly such an approach is susceptible to fundamental queries concerning validity as the use of, in this case, five separate elements of evaluation could increase inherent weaknesses five-fold. But, this must be tempered with the consideration that no single instrument can reasonably be said to encompass the whole range of factors identified as impacting upon learning, and that any useful measure must include both a quantitative and a qualitative element.

It is recognised that the selection of the methodology outlined above is not without some degree of controversy. Some have argued that there is in fact no evidence that those adopting a deep approach to learning are more successful (Newble and Clark 1986), and that a particular approach to learning is not a characteristic of an individual (Ramsden 1987). It has also been suggested that the original Approaches to Studying questionnaire, on which the version used here is a development of, was flawed in that there is little evidence for the existence of the four orientations used within the questionnaire; meaning orientation, reproducing orientation, non-academic orientation, and strategic orientation. Although there is evidence that suggests there are indeed two orientations to studying i.e. deep and surface (Watkins 1982, Clarke 1986, Meyer 1988). Similarly, Kolb's learning style theory, which forms the basis for Honey and Mumford's LSQ, is based on only a single piece of unpublished research, leading Freedman and Stumpf (1980) to conclude that Kolb's instrument is invalid, and that there is little empirical evidence to support his theory of learning. Whilst a part of the proposed methodology identifies an individual's learning style, there has also been some debate as to whether it is appropriate to then match the type of instruction used to that style (Snow and Lehman 1984), or to aim for a conscious mismatch (Hayes and Allinson 1994). Whilst others have gone further in proposing that a truly proficient learner demonstrates an ability to switch between styles according to the nature of the learning task, developing a *synthetic* (Kirby 1988) or *versatile* (Pask 1988) style.

.There has also been much discussion as to the validity or otherwise of the Self-Directed Learning Readiness Scale (SDLRS). Although the scale has been widely used (see for example: Savoie 1980, Box 1983, Wiley 1982, Crook 1985, Palumbo 1989), it has also been widely criticised on the grounds that it is methodologically and conceptually flawed (Long and Agyekum 1983) and most notably by Field (1989, 1990). In light of this ongoing discussion in the literature, the use of the SDLRS in isolation would certainly appear to be questionable. However, given that it forms only a part of the mechanism for generating the profile, its use is justified. Although further development of the profile is still in progress to establish both content and concurrent validity.

Conclusions.

It has been argued that in adopting a more open approach to higher education, educators must consider the ability of learners to learn, in addition to general academic ability. Given that learning is a process that individuals will express differing degrees of competence in, a form of assessment of individual learning ability will aid the educator in facilitating the achievement of quality in learning. The proposed methodology constitutes a comprehensive analysis tool for the construction of a learning profile, that embraces the key actors that impinge upon learning.

Once profiles have been constructed for a group of students, the lecturer will then be in a position to achieve several objectives; select appropriate learning activities given the group's learning characteristics, assign individuals to sub-groups for syndicate work based on comparable profiles, include development tasks and teaching input to address identified areas of weakness. The overall aim to be the attainment of quality in learning within a structure that seeks to educate an increasingly growing student population.

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Using Computers in Teaching Sophisticated Conceptual Material via Distance Education.

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Introduction:

In distance education, where opportunities for face-to-face learning are either very limited or altogether absent, computer mediated communication (CMC) provides a powerful means for interactive learning between both individuals and groups. CMC acts as an electronic extension of learning beyond traditional media of instruction and this is its greatest asset. Thus research studies that explore how it can most effectively be used are vitally important to determining the merits and best applications of this emerging technology.

In this paper, we contend that much of current research on the benefits of using the computer in instruction and learning tends to reflect the interactive surface structures of CMC rather than capturing the less obvious quality of learning taking place between students in an on-line environment. That is, data analyses are typically derived from frequency counts of number of "log-ons" over some specified time period, documented amount of time spent on-line, number of messages, conference notes, or lines of discussion, and the "mapping" of patterns of interactions between participants (see, for example, Harasim, 1989; Pierce, 1992). Further, frequency counts have been used to document the type of topic that may be addressed between students and how they spoke to each other, including such items as number of instances of questions, statements, requests, and the like (Reidl, 1989; Friedman & McCullough, 1992). Researchers who focus on such quantitative aspects of interactions have generated much valuable information about the nature of communication between on-line participants.

We feel, however, that research efforts need to be directed, as well, toward content analysis of student responses. It is important to be able to develop means to more readily guage the level and quality of learning via CMC, particularly because learning in this medium appears to work best when students themselves monitor conference interactions as Tagg (1994) has demonstrated. Thus the purpose of this study was to look critically at student discussions of course content requiring understanding, analysis, and application of sophisticated conceptual materials. We were particularly interested to identify response patterns that indicated students' level of understanding of complex information. We also wanted to gauge the extent to which support and application of new ideas and teaching methods were judged in terms of the course readings and in terms of traditional classroom practice.

The Course

Our analysis focussed on a fourth year university course entitled "Imagination in Teaching and Learning". This topic reflects an area of high interest for in-service

teachers. In practice, however, little is available either to explicate what is meant in pedagogical practice by imagination or to validate the work of teachers who try to stimulate it. Fairly detailed study of it and a focus on what could be done to stimulate imagination in teaching and learning was thus perceived to be both informative and useful by the students.

The course consisted of text and print-based materials and was conducted primarily on-line with opportunities for e-mail chat and telephone tutoring back-up available for anyone who wanted to use them. Computer conferences, keyed to the course readings comprised nine topics organized into three topics each for the three conference sets. The first set included issues concerning introductory and background information and perspectives on the imagination from a variety of literary, anthropological, psychological, sociolological, scientific and educational points of view, the second set asked students to deal with philosophical issues on the imagination, and the third set focussed on strategies for practical implementation in the classroom setting. A separate conference, called "meeting place" served the simple purpose of having everyone sign on and tell a little about themselves. We were interested to note that nearly all of the students wrote here what we thought to be mini-autobiographies. This did prove useful, as clearly the students tried hard to form some images of each other, and referred to details of these entries at various times during the course.

The course took place over a period of thirteen weeks, allowing one week for sign-on and introductions, ten weeks to proceed through the various conferences, one week for wrap-up, and the final week to complete assignments for submission. Thus, like its campus counterpart, the course moved at a fairly rapid pace.

The Instructor

The course was an on-line adaptation of the campus course taught by the same instructor. All students were contacted and welcomed by the instructor at the onset of the course via the introductory conference "meeting place". A second conference, "mega-chat", was designed to introduce students to the course structure and processes, including on-line expectations, assignments, and the like, and to answer any questions they might have had about it. Each of the content conferences contained the instructor's introduction which included a brief overview of the materials and identification of the main themes and key issues that pertained to the particular readings concerned.

Student responses were monitored throughout the course primarily by the instructor acknowledging, by name, each student's contribution to the discussion, and by identifying and weaving together common themes, issues, key terms and points, summarizing, and so forth, within and across the various conferences.

The Students

Twelve in-service teachers, nine women and three men, geographically removed from campus, participated in the course. Of these, eight were consistently moderately or highly active on-line. With the exception of one beginner, all had an

average of ten years of teaching experience between them, ranging from two to seventeen years of practice.

As the course was still experimental, it was decided to keep enrollments limited. In retrospect, however, this number should have been increased to around fifteen to ensure that at least a dozen were moderately to highly active in the conferences. Nevertheless, some interesting patterns of learning did emerge, though the limited number of participants allow for tentative considerations only.

Approach

At time of writing we have completed about one-half of the content analysis of the conference protocols; three topics from the first set, one from the second set and two from the third set. Conference protocols from the first two sets were analyzed three ways. First, we identified two common levels of understanding as they related to the course readings and, second, the criteria associated with them. Third, whether or not the students attempted to apply the readings to their own professional and related personal experiences was also assessed. These were coded according to the following criteria:

the surface level includes responses that

(a)   summarize, paraphrase or quote the readings,

(b)   state agreement, disagreement without explanation,

(c)   give an opinion without explanation,

(d)   pose questions and answer them in an off-topic fashion, or

(e)   give vaguely connected information;

the analytical/critical level includes responses that

(a) make interpretive/inferential comments,

(b) make critical judgements,

(c) make critical observations,

(d) compare and contrast aspects of different readings, and

(e) agree/disagree, explaining why.

Applications to professional/personal experiences were coded according to the above criteria with additional coding for

(a) direct reference to teaching practice,

(b) parental practice as it relates to teaching and learning, and

(c) discussion of children's imaginative activities in the classroom, at

home or the teacher's own childhood experiences.

Analysis of the third conference set designed specifically to deal with applications to teaching was coded as follows:

(a) interpretation—includes cross-references to the readings, analysis of strategies and new ideas,

(b) evaluation of traditional schooling and teaching practices,

(c) support for and application of new ideas, and

(d) critical of new ideas.

Results

Results by Course

Overall, participation in the three conference sets was fairly evenly distributed: students made a total of 63 contributions to the three sets, numbering 23 (37%), 19 (30%), and 21 (33%) respectively, which indicated that the amount of interest and participation remained fairly consistent throughout the course. In all, contributions totalled 3,809 lines of discussion. Responses tended, on the whole to be quite lengthy, averaging 317 lines per student, 380 per conference, and 1,270 per conference set.

Results by On-line conferences

Responses were coded into two separate categories, "readings" and "applications". The first category comprised conference sets one and two which included background and theory, and philosophical commentary respectively. The "readings" category was first coded for type of response including academic, professional, and personal responses to the readings, and second, for level of understanding achieved which included the surface and interpretive/analytical levels. The "application" responses were coded for thoughtful commentary comparing new ideas with traditional practices.

Sets One and Two: Readings

Results by type of response: From a total of 247 coded items, 71% comprised academic responses to readings, 16% concerned professionally oriented responses to the readings, and 13% personally oriented responses to the readings. These results suggest that students' efforts were primarily concerned, at least initially and during the first two conference sets, with achieving some level of understanding of the materials alone, and less with understanding them in terms of professional practices or personal beliefs. Most responses tended to address each of the assigned readings in a serial fashion. Though this was not a planned outcome, it did make it easy for other students to respond to a particular student's comments about a given reading.

Results by level of understanding. In order to judge the level of understanding achieved, further analysis of the 247 responses were then coded either for surface or interpretive/analytical levels of understanding. This showed that 149 or 60% remained at the surface level and 53 or 22% at the interpretive/analytical level. A remaining 45 or 18% of responses referred exclusively to professional/personal experiences as they related to teaching or parenting practices designed to encourage imaginative learning. Though the readings were no doubt a catalyst to these commentaries, only a modicum of effort

went into making the connections clear. The teachers were obviously taking an opportunity to share a successfully implemented home or school strategy with their colleagues.

Surface level response patterns. Clearly, students spent much of their on-line time coming to grips with what the various authors were saying in a most literal sense. Two common response patterns did emerge at the surface level of understanding. Close to 50% consisted of efforts expressed in the following pattern:

i) summarizing or paraphrasing excerpts from the readings, stating one or more opinions about them, and making statements of agreement or disagreement, not necessarily in that order.

The remaining 10% followed a different pattern. These students would

ii) pose a question, provide an answer, sometimes adding an example, pose the next question, answer it, and so on, in a serial fashion.

This second response pattern indicated insufficient understanding of the materials, as much of it contained tangentially related statements, or responses that were altogether off-topic, or a vague series of musings, and the like.

Interpretive/analytical understanding. Less than one quarter of all the responses coded in the first two conference sets indicated deeper understanding at the analytical/critical level. Those made, however, demonstrated that most students, at various points in the sets, were either positively or negatively disposed to the readings and took great pains to explain their reactions. They made cross-comparisons of the readings to highlight certain points, agreed or disagreed with the readings and with each other by inferring meaning or implications of particular points, and sometimes invoked related personal or professional experiences to underscore their arguments. Some achieved more comprehensive understanding than others as gauged by the number and quality of responses they made to the various topics.

Set Three: Applications

From a total of 120 coded responses, fully 70% involved comparing the new ideas and related methods of teaching with traditional practices. These were discussed in terms of support for the ideas and experimentation with applications (37%). Questioning traditional practices in light of the new ideas comprised 33% of the comments coded. The remaining 30% of commentary concerned interpretation and analysis of the new ideas and cross-referencing these with the course readings (17%), as well as critically evaluating the new ideas themselves (13%).

The readings from this last set of computer conferences, though applied and thus more readily understandable to students than the previous readings, met with responses that were almost entirely interpretive, and thoughtfully critical and analytical in nature. No doubt the more applied orientation of the materials did have something to do with this, but it would be a mistake to attribute it solely to this reason. There were, for example, enough insightful cross-comparisons from

the readings to suggest that the effect of having to wrestle with conceptually sophisticated materials may have enhanced development of student's general critical abilities.

Discussion

Readings. Very generally, our preliminary data analysis of information from on-line conference sets one and two indicated that the majority of responses to the readings occurred at the level of surface understanding and less so at the deeper level of conceptual and analytical understanding. We had anticipated this, but not to the extent it actually occurred, given that the students were at the fourth year university level and also were more mature and professionally experienced than most undergraduate students.

Further analysis indicated that the teachers appeared somewhat reluctant to respond to the readings in the first two conference sets in terms of professional or personal application, at least in this part of the course. At the beginning of the course, the teachers had acknowledged in "meeting place" that issues concerning the imagination and how better to understand it, were of foremost concern to them in their classroom practice. This led us to speculate initially that the majority of responses might tend to relate the readings first to professional experience and second, directly to the readings only. Given that students were dealing with some highly complex and abstract ideas in the first four topics coded, it wasn't too surprising to see that they tended more to wrestle with meaning first and consider applications after the fact, despite initial enthusiasm to do the contrary.

It was evident that these teachers were encouraged by the overall willingness of members of the group to go "on-line", and hence public, with their difficulties in understanding the readings. This, then, became common cause. Even disagreements about the readings were handled with a good deal of consideration and tact.

Interestingly, all the moderately or highly active students displayed analytical/critical understanding at least once during the four topics of the first two sets coded thus far, which may mean that the more involved one is, the more likely it is that deeper levels of understanding will be achieved. This suggests that measures implemented to restrict information overload on-line, as suggested by Tagg (1994), may need to be carefully balanced against the need to work through levels of understanding of the readings, at least where conceptually sophisticated materials are concerned.

About half of the students commented on information overload while working through the first two conference sets. Although the difficulties they experienced were understandable, the very nature of the content required consistent participation in order to keep up with the established pace of the course. This was the case, as well, for the on-campus students.

Applications. In the third conference set, students first expressed a sense of relief in moving from the theoretical and philosophical phases to the implementation and thus the more practical, and more readily understandable, phase of the course. Here, of course, responses related directly to teaching

practice, although some insightful cross-referencing to the readings from the first two sets did occur. Generally, teachers were supportive of new ideas and methods and some were already implementing them in the classroom. They tended to use ideas garnered from this phase of the course to apply thoughtful criticism to more traditional classroom practices. The teachers were also quite candid about debating the merits and issues of concern about the new ideas and methods put forward in the last conference set (some of which were the instructor's). This was quite encouraging as these interactions demonstrated they had achieved a measure of comfort and ease with working in the on-line environment, both toward the instructor and with each other.

Although the amount of participation here, as indicated by number of lines of discussion, remained the same as the first two sets, no one commented on information overload. Clearly, the teachers had found their stride. It was gratifying to see the informed ways they made use of newly acquired theoretical and philosophical information on the imagination and related new ideas and methods for teaching practice.

It was evident from their comments that the students printed out or otherwise conscientiously used the conference discussions for reference, not only from the comparative comments they made about the readings and each other's contributions, but also from the debates that ensued about the relative merits of the new versus traditional ideas and methods and shared observations from applications. This strongly indicates that on-line conferencing may be one good means to facilitate bridging the gap between theoretical understanding and its application to practical issues. If we were pressed to choose what we consider to be the one greatest strength of computer conferencing it would be the contribution use of the permanent record appears to make toward closing the gap between theory and practice that inevitably ensues when students must deal with sophisticated conceptual materials.

Recommendations for On-line Teaching of Difficult Conceptual Material

(a) Given that information overload due to students efforts to come to grips with difficult material is a desirable outcome in courses of this nature, some mechanism for briefer and more frequent participation is desirable. It should be made clear, for example, that students' commentaries will not be graded. This would encourage more debate and discussion and discourage the propensity to make conference contributions that resemble mini-papers in style.

(b) The number of participants should be kept to 12 to 15 students. This would provide sufficient numbers to ensure a "critical mass" for interactive conferencing. It is also small enough to allow the instructor opportunities to provide attention to students struggling to achieve better understanding of the material.

(c) It may be a good idea to undertake a small series of succinct content analyses of ongoing conferences in order to assess response patterns that indicate incipient poor understanding of the materials. Students experiencing difficulties could receive more specific instruction early on in the course and

the instructor needn't wait until the assignments are in before discovering where the more serious problems lie.

(d) Written, general overviews of difficult content that provide more detail than the introduction to conferences given at the outset of the course may prove helpful. These would act as advance organizers for the more complex information to follow.

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Strategic Issues in Managing Open Learning

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The Corporate Plan

A corporate plan provides a strategic framework within which educational institutions propose to operate over the medium to longer term. It is primarily concerned with providing a systematic and comprehensive understanding of the institution, its aims and objectives, its methods of operations, its resourcing and any other aspects appertaining to its managed growth and development.

Putting the Learner First

Putting the learner first, measured by any criteria, cannot be achieved without a strategic overview, in addition to a range of operational and strategic actions.

Educational institutions have a difficult task of determining how they actually shift the supply side, with all the stresses and operational problems into a state where they can handle dynamic and ever changing needs and provision.
Every level of the institution and every level of decision making needs to be integral in this process.

Strategically, the key roles of senior managers are in shaping the organisations thinking, mission and interpretation of the mission, for example by encouraging a respect for the concept of open learning and determining behaviour patterns, such as an orientation towards learner flexibility and experimentation.

To achieve these objectives, it is necessary for managers to target issues such as efficiency, quality, flexibility and innovation through open learning.

Efficiency, in dealing with resource constraints and in responding to small, economical shifts in resource allocations and staffing.

Quality, centred upon product and service criteria and carrying with it greater emphasis upon communication and co-operation between diverse groups of staff, managers, departments and faculties.

Flexibility, in modifying packages to customer individualisation, in which change needs to be rapid in response to feedback.

Innovation, so as to make an effective contribution to future needs.

Any educational institution in pursuit of quality must learn and develop. To be fully effective, this will evolve through the transmission of the institution's learning to all individuals and groups, both internally and externally.

Institutional change

Strategic choices for all institutions are determined by a number of factors. To survive and prosper in the longer term, education need to have the capacity to change, as both internal and external forces operate. This capacity to change is not an option, it is a pre requisite for survival.

'Rationalisation' and 'a return to the core business' are two strategies that may enable an institution to turn its fortunes, depending on the real nature of the problem, the structure, style and culture of the institution and the broader environmental issues and trends.

These two strategies have neither a 'negative' nor a 'do-nothing' philosophy. When utilised correctly, they are positive actions.

A return to core business policy, is designed to refocus an institution's direction and corporate mission towards what is considered to be central to its business. Student centred open learning in this context is potentially a key component.

Corporate rationalisation has a specific aim to improve efficiency and profitability through a more effective functional, departmental or structural system. In this context, the establishment of an open learning division, for example, within the remit of a centralised education development function can generate added value for the institution and its learners.

But in both cases, the aims will neither be achieved easily nor quickly. The total process may well be based on the medium to long term, but some of the shorter term actions will be key issues .

Synergy

An educational institution needing redirection may have all the characteristics of reverse synergy - the process which makes the whole worth less than the parts. This compares with the advantages of synergy wherein the total benefits to an institution exceeds the sum of the individual parts.

To maximise the synergy or added value of open learning, a number of perspectives need to be considered. For example ;

-The total institutional consequences of open learning
-The financial issues, both from the perspective of the institution, its financial stakeholders and all other interested parties
-The people issues, including staff development, institutional flexibility and both staff and student recruitment & selection.
-The marketing issues relating to differential focus, market share, customers and competitors
-Research and development in relation to market performance and courseware development
-Information technology, corporate knowledge and information systems, with its administrative, assessment and package development function
-Environmental issues such as the national and international market, the range and level of packages needed together with industrial and governmental intervention.

The bottom line may well be that of identifying the "right" open learning focus whilst acquiring efficiency and effectiveness to achieve it. Alternatively, this could result in ignoring what may be the main growth areas for the future ! However, it may also mean that opportunities are ignored as they do not immediately correlate with the redefined core and mission.

Institutional Characteristics

Peters and Waterman have defined a"loose-tight" organisation as one that demonstrates certain positive characteristics that can be considered as being supportive of the effective and efficient implementation of open learning. For example,
*The institution is organic rather than mechanistic, reflecting it ability to respond to open learning.
*There is a sense of 'ownership' of open learning by all involved.
*Planning and analytical functions are highly developed to enable future and on-going product modifications and improvement to be undertaken.
*It is possible, even encouraged to challenge and question the norms and hypotheses within the institution, relating to alternative learning processes and systems.
*There is a relatively high degree of informality between the managerial levels related to strategic, operational and "teaching" functions.
*Internal competition is positively encouraged and promoted. Emphasis is put upon effectiveness and open learning quality.
*Emphasis is also placed on functional integration rather than isolation, thus strengthening the institutional open learning identity.
 These elements are supported both 'top down' and 'bottom up'. Normally this support will be personified, for instance via a charismatic pro-vice chancellor, director or the open learning project team.
*This support will be both positive and visible but not controlling.
*The senior managers provide both strategic direction and structural guidance.
*Future change is considered more significant than history.

Additionally,
*Open learning managers must be enabled to manage.
*Open learning must learn from its customers. Hence know what the client wants and provide it with quality, service and reliability.
*Recognise that open learning staff should be functional, not dysfunctional.
*Make open learning management, hands on and value driven.
*Know the business of open learning.
*Ensure that the open learning function is lean, not hierarchical.

Independent Education

Educational systems in the UK of the 1990's, at all levels: school, further and higher have embraced independence. The various statutes and White papers of the late 1980's and early 1990's have put into force a momentum to change that Weick referred to as 'an unconventional approach to rationalistic or bureaucratic theory'. Educational institutions are becoming more business like in the traditional sense of the word. Their emphasis is shifting towards :

*a more conventional approach to the concepts of internal cost centres, internal rates of return and profitability,
*a more flexible, responsive attitude towards external markets and competitiveness,
*a more receptive attitude towards concepts such as evaluation, appraisal, quality, and internal customers,
*a broader implementation of Management Information Systems.

The overall thrust as far as open learning is concerned is towards more effective management with greater reliance on efficiency and quality. The key management issues of finance, human relations, marketing and Information Technology are all being addressed.
From a largely functional or design perspective, Tony Becher has considered the conflicting values and interests within educational institutions. His study considers educational institutions in a pre independence culture, but many of the issues are still relevant.
He suggests that the relationships between the constituent departments within the institution 'can give rise to the ability to translate even quite substantial outside pressures for change into comparatively minor local changes'.
An appreciation of these complex inter relationships he proposes should help in the accommodation of the 'inevitable and legitimate differences'. The institution should determine the guiding principles for action rather than lay down uniform procedures. A basic unit such as open learning should interpret these principles in terms of its own form of guiding practice.

Return on Investment

The use of ROI as a measure of performance provides a useful guide to institutional and departmental effectiveness from a financial perspective, especially for decentralised institutions such as those in education.

Return on Investment can be expressed as Net Income / Investment or more simply, profit / cost and is normally expressed as a ratio. Thus for example, an institutions open learning facility with a ratio for ROI of 1: 5, indicates that for every five units of input, an extra one unit of profit has been generated.
As a measure of divisional performance, Return on Investment has a number of advantages and disadvantages :
It is easily understood as a single ratio, but may be too simplistic, especially over short time periods.
It is quite effective at reflecting history and current performance, but limited as a risk predictor. Here its strength lies in its longer term contribution to managing open learning.
It is suitable when an activity can be related to output such as pass rates but doesn't fully relate to intangible activities such as customer satisfaction with open learning as compared with more traditional delivery.

Open Learning's life cycle.

Open learning as a product can be considered to have a life cycle. This is to a great extent determined by operational activities such as its objectives and aim, external issues (political, social, cultural), policies and systems for achieving these objectives, and systems for monitoring performance.

Additionally at a strategic level, open learning generates a need for specific inclusion within the institution's strategic plan, acceptance of the need for extended lead times in introducing the system and generating return and a holistic approach to include open learning within the total educational package offered.

Thus open learning needs to be constantly, systematically and quickly re- evaluated to assess the immediate or potential contribution to added student value. It needs to be recognised that as a product or service, open learning is not a singular end product, valid for life. It will progress through a period of development, growth and stability prior to decline. Prior to the later phases, the product or service needs to be re-booted to generate a new growth cycle.

SWOT Analysis

SWOT analysis, is a conventional managerial tool for appraising and evaluating corporate planning, both from an internal and an external perspective.

Typically for an education institution, the internal strengths and weaknesses addressed will include reference to elements of finance, marketing, sector position, research and development, production, distribution, administration, management and people.
With reference to external opportunities and threats, issues concerned with the 'competition', the broader economy and changing technology are additionally relevant.
It additionally helps an institution to identify potential open learning markets and to identify current good and bad practices.
A SWOT analysis does not provide the answers though, in terms of what education should do or how it should do it. It is purely a tool that systematically provides guiding data and knowledge to enable an institution to make justified and reasonable plans.
Furthermore, the completion of a SWOT analysis, followed by its implementation is not the end product. It should be considered as the first of a continuous series of such analysis that over the years are constantly reviewed and revised.

Taking open learning as an example within a hypothetical institution and utilising some but not all of the SWOT elements, an understanding of the internal and external issues relevant to its future become clearer.

Strengths :
A core team of staff experienced in open learning are available
They are highly motivated, driven in the short term by student performance and in the longer term by promotion opportunities.
An established IT / IS framework is established.
Additional support is available through relatively high levels of part time and other flexible staff, both for administration and student support.

Opportunities :
A diverse, existing range of packages are available.
Trends, local and national, indicate growth in the market.
Open learning offers support to the development of NVQ's and GNVQ's. Economic and social trends and indicators are well researched and available thus facilitating planning, product development and staff development.

Weaknesses :
As a medium sized institution, the strengths that the larger multi site institutions can provide such as a more cost effective framework and greater strength in guidance are not available . Although established, there is a lack of integration and compatibility in the IT systems utilised by academic and support staff.

Threats :
Not all professional and other bodies accept the quality of open learning and may withdraw recognition.

On the basis of the extended and comprehensive use of such an analysis, an institution can decide its future strategy.

Marketing Issues

A common view is that a marketing strategy comprises four key elements, often referred to as the "4 P's" of price, place, product and promotion. In combination, they enable an institution to generate a required response from the targeted market. A simplified example based purely upon two of these variables , price and product, gives an indication of the types of strategies to be employed.
For example, a high quality, high priced open learning package will require a strategy directed towards a premium, possibly specialist niche market. A low priced, medium quality open learning product may well find a broader shorter term market.

The Boston Consulting Group have considered the relationship of company performance and hence potential, long term financial strength with corporate learning, market specialisation, operational capacity and market share. As such, their matrix is a well established guide to product performance within its market, taking into account market share and market growth. In the context of open learning, it can aid in assessing the strengths and weaknesses of various packages implemented and utilised.
It may be considered by an institution for example that it is spending heavily to increase its market share of open learning locally yet simultaneously, they are unlikely to achieve sufficient cost reductions to fully offset the investment.
Nether the less, the institution may still find that open learning should provide part of its educational structure.
Its FEFC / HEFC supported programmes may be "cash cows", in that they are providing regular annual funds and corporate financial stability, whilst other products, the "question mark" category are beginning to provide an investment base. These may well include the developing range of open learning provision with its high rate of market growth. Open learning funding may well be generated internally to further aid growth by diverting resources away from "dog" category educational services with their low rate of market growth and low level of market share.

Team Issues

The balanced, open learning team, with its common aim or purpose can operate both formally and informally. It must be recognised that all individual have their own characteristics and that the individuals strengths and weaknesses will vary according to the current aims of the team.

An individual is not automatically the appropriate person to have within an open learning team purely because that person has proven managerial power in another area.
The team will be most effective when it has the best balance of team roles filled by the best balance of individuals. Once achieved, the team and its individual membership may operate more effectively and efficiently in differentiating open learning tasks and processes.
In this context, the learner with appropriate support and guidance becomes a key, functional team member, providing knowledge and feedback and contributing to longer term open learning provision.

Putting the student first should not be considered a one-off target, but as an integral part of the strategic planning, implementation and managerial process.

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PUTTING THE STUDENT FIRST : POLICY, PERCEPTIONS AND PRACTICE AT LUTON

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Research Objective

The objective of the research discussed in this paper is to assess the perceptions, choices and experience of students on modules and programmes that include an open learning component.

"Putting the student first" is a philosophy that although idealised in theory, is more difficult to achieve in practice. This paper raises and evaluates some of the issues that have been raised at the University of Luton in its quest to introduce greater levels of open and flexible learning, within a broader context of extending and improving student centred learning .

Within a University or any other institution that delivers support to the student by means of open or flexible learning, there is a need to satisfy a number of driving forces. These include not just the student, but also the needs of, for example, the staff and the University in all its component parts such as finance, administrative and strategically. The balance is crucial to effective and efficient student learning.

Definitions of Open Learning

The many definitions of learning that include reference to open, flexible, student centred and resource based amongst others, raise a range of issues that appear to cause great difficulty for many staff, in terms of generating a user friendly, workable model. At Luton the general emphasis is on the implications of the methods adopted on all concerned, which with the support of the validation and QA processes is student focused.

This builds on the varied definitions of open learning that have been established. Lewis & Spencer (1986) perceived OL as a means "to describe a course flexibly designed to meet individual requirements".
Thorpe & Grugeon (1987) saw OL as an umbrella term which refers to a series of varied educational initiatives and provisions.
Mainwaring (1986) utilised this umbrella terminology to refer to a series of sub-sets that also included flexible learning, learning by appointment, resource based learning and distance learning.
Kember & Murphy (1990) take this a stage further with their eleven degrees of flexibility or openness. These are a flexible sequence, negotiated objectives,

negotiated learning method, open entry, negotiated assessment, study anywhere, start anytime, finish any time, tutors on demand, attendance any time and choice of support.

More recently, Robinson and Clark(1992) have defined an OL system as having a degree of learner control over the curriculum and having an emphasis on a technology as the primary teaching medium.

Research Methodology

The sample for this study comes from 3 sources :-

(1) UNDERGRADUATE

These level 1, full time students included Estate Management students from the Faculty of Design & Technology and Society and Social Science students from the Faculty of Health Care & Social Studies. The Health Care students learning was based aroud documents produced by the O.U. with the support of a detailed support pack. This replaced about 30 hours of contact. The Estate Management students, to a significant extent, utilised general DTI documentation for 15 hours of their European module with additional guiding support .

A total of 27 students completed the questionnaire.

(2) POST-EXPERIENCE

The sample were students on the Professional Management Foundation Programme which is Stage 1 of the Institute of Personnel and Development qualification scheme. It is a Part-time course for practising Personnel employees and attendance at the Management Faculty is one afternoon and evening a week over 1 year.

The course consists of 5 modules and one of these, Management Information Systems, was delivered in Open Learning mode for the first time in 1994.   The Module was devised by the Course tutor and consisted of a computer-based programme with a Workbook to teach Spreadsheets, Databases and Word Processing in MS Works.

The Tutor was present for the first and last sessions and for the intervening weeks (totalling 12 hours) the students worked on the Faculty's Computers (or, if they had compatible software, at home or their place of work) with occasional assistance from a Research Assistant. The remainder of the course was delivered by traditional methods.

20 out of the 25 students completed the questionnaire.

(3) POST-GRADUATE

The final group were studying on the IPD Stage 2 course which was delivered by 'Flexible Learning' This method of studying was introduced by the IPD in 1993 using specially commissioned materials (Workbooks , Audios, Videos) which are studied at home, but Faculty of Management support is given for a total of 36 hours a year through tutorials and workshops. There is also a degree of Telephone support on a proactive basis. Of the 18 students on this 2 year course , 11 completed the questionnaire.

The objectives of the Questionnaire were 3 fold :-

(1) To determine the views and preferences of students on the nature of the materials used , the support given and the advantages to the student of the genre.

(2) To draw inter-comparisons from the three groups to determine whether different approaches are required for differing groups of students.

(3) To examine the students' own experience of these factors and to draw conclusions on best practice from their course assessments

The Questionnaires were completed anonymously either in class with a third party present or returned by post.

The Questionnaire

The Questionnaire contained 5 sections :-

(a) The nature of the Open Learning material's content
(b) The perceived advantages of this system of learning
(c) The Learning media
(d) The degree and nature of tutor support
(e) The use and comprehensiveness of the material

In 4 of the sections , students were asked 3 groups of questions :-

(a) To rate the importance of a particular item or to agree/disagree with a statement on a 1-4 Likert scale

(b) To rank the items or statements in order

(c) To rate their own experience of this items or statements

A mean score was calculated for each appropriate question with the high scores indicating a positive response to the question.

For example , the first question was the statement :-

'The materials must be up to date'

and the results were as follows :-

		unimportant			essential		
	score	1	2	3	4	Midpoint	Mean
Undergraduates		0	0	10	17	2.5	3.63
Post-experience		0	0	6	14	2.5	3.70
Post-graduate		0	0	2	9	2.5	3.82

Tables subsequently will give only the mean score (plus the midpoint where it differs from 2.5).

SECTION 1 - CONTENT OF THE MATERIALS - RESULTS

	Rating			Ranking			Experience		
	Under grad	Post exp	Post grad	Under grad	Post exp	Post grad	Under grad	Post exp	Post grad
The materials must be up to date	3.63	3.70	3.82	3.11	2.90	2.82	3.37	2.80	2.27
The materials must be relevant the course	3.74	3.75	4.00	2.70	2.75	3.27	3.41	2.70	3.63
The materials must look professional	2.85	3.15	2.91	1.85	1.45	1.64	3.11	2.45	3.45
The materials must have been piloted before use	3.26	3.80	3.54	2.34	2.90	2.27			
					10.00	10.00	10.00		

Students were clearly more concerned over the *contents* of the materials rather than their appearance and this result was consistent over all 3 groups. It appeared at its strongest on the forced ranking. There was little difference between the issues of the relevance and the contemporary nature of the materials , even at the Post graduate level where one would have expected students to demand up-to the minute materials as a priority

The high scores for *Piloting* for the Post-experience group stands out. This reflected the students' concern that the new programme did not have sufficient testing before introduction. If the material had errors , it presented considerable problems for the student , particularly those whose computer literacy was not at a high level.

Scores for *Experience* for the undergraduate group showed considerable satisfaction , all 3 being well above the midpoint. For the Post-graduates , some of the material (produced in 1992) had been overtaken by recent legislation and other developments so updating was required. This was given in tutorials and workshops but did not completely overcome the students' concerns that their main source could be flawed.

SECTION 2 - ADVANTAGES TO THE STUDENT - RESULTS

	Rating			Ranking (midpoint 3.0)			Experience		
	Under grad	Post-Ex	Post grad	Under grad	Post-ex	Post grad	Under grad	Post-Ex	Post gra
The system must allow me to study									
WHENEVER I like	3.07	3.60	3.45	3.70	3.60	3.82	3.41	2.40	3.82
It must allow me to study									
WHEREVER I like	3.00	3.45	3.27	2.67	3.05	2.73	3.19	2.05	3.10
It must allow me to test myself									
as I study	3.22	3.50	3.27	3.15	2.80	2.73	2.59	2.01	3.45
It must allow me to go at a									
faster pace if I like	3.40	3.65	3.64	2.85	2.80	2.82	2.74	2.65	3.82
It must allow me to go at a slower									
pace if I like	3.37	3.65	3.64	2.63	2.75	2.90	3.03	2.35	2.73
				15.00	15.00	15.00			

When rating the 5 factors , students found all of them to be important. However , when the forced ranking results are examined ., it can be seen that students give the most weight to being able to study WHENEVER they like by a clear majority. The other factors are a pace behind in no specific order , all below the midpoint. It is apparent that the ability to choose their time of study was crucial to their enjoyment of the course. This is also confirmed in the Experience results where the difficulties faced by the Post-experience group in using the materials is reflected in the mean scores being mostly below the midpoint. Insufficient self-testing and the lack of choice as to WHERE to study were picked out as particular problems.

Open learning advocates have often stressed the critical importance of students being able to work at their own pace. There is no evidence here of students regarding this feature as vital. Their rankings are well below the time convenience factor. In practical terms , some advantages have been perceived but the deadlines of Assignments and the modular time phases put substantial strains on the pace of work particularly , for those that want to go at a slower pace.

The location difficulties with computer-based programmes is dealt with in the Discussions & Implications section.

SECTION 3 - LEARNING MEDIA - RESULTS

	Rating - ease of use			Rating - value			Ranking for future (mid - 3.0)		
	Under grad	Post Exp	Post grad	Under grad	Post Exp	Post grad	Under grad	Post Exp	Post gra
Workbooks	3.29	2.45	3.64	3.22	2.55	3.64	3.96	3.79	4.00
Videos	n.a	n.a	4.00	n.a	n.a	2.64	3.37	3.68	3.63
Audios	n.a	n.a	3.73	n.a	n.a	2.10	2.22	1.84	2.64
Computer-based	n.a	2.18	n.a	n.a	2.23	n.a	2.66	3.00	2.64
Multi-media	n.a	n.a	n.a	n.a	n.a	n.a	2.37	2.68	2.00

In this section , students were asked to rate the materials for Ease of Use and Value to themselves and then to Rank them for Future Use. Some of the students had no experience of certain Media (n.a).

For Undergraduates and Post-Graduates , Workbooks in use were highly valued. Not so for Post-Experience students where the ratings for both the workbooks and the computer-based learning were comparatively low. Although Post-graduate students found the videos and audios easy to use , they did not find them valuable.

A major surprise was the ranking for future use of computer-based materials. Given that they were all under 30 (undergraduates under 25) and they had , on the whole , a high computer-literacy rate , they did not look forward with high hopes to using computer-based materials in the future, preferring to rely on text based materials with help from videos.

SECTION 4 - TUTORIAL SUPPORT - RESULTS

	Rating		Ranking (midpoint 4.0)				Experience		
	UG	PE	PG	UG	PE	PG	UG	PE	PG
Tutorial support on a fixed regular face-to-face basis	3.56	3.65	3.36	5.59	5.90	4.36	2.89	1.45	2.46
Effective guidance at the start of the course	3.81	3.90	3.63	5.70	5.20	5.55	2.59	1.45	2.82
Suitable counselling prior to starting the module or course	3.03	3.40	3.10	4.30	4.00	4.64	2.15	1.25	2.09
Help in establishing support groups	2.81	3.10	2.36	3.44	3.55	3.36	1.48	0.65	1.64
Tutorial support on a drop-in basis	3.11	3.25	2.73	3.88	3.85	3.27	2.04	0.85	0.72
Tutorial support via the telephone	2.44	2.85	3.45	2.43	3.50	4.27	0.52	0.80	2.09
'Newsletter' type of support	2.51	2.35	2.09	2.66	1.80	2.55	0.37	0.25	0.55

For all of the students , Effective guidance at the start of the course and fixed regular , face-to-face tutorial support are the key to success in this group of factors ranking either first or second . For the former , their expectations were realised in practice(scores in excess of 2.45) but the Post-experience students were disappointed(score :1.45)

For Post-graduate students , some of whom were self-funding , counselling at the start was vital . As the whole course was by Open Learning , telephone support was also important so tutors could help with any problems with the material and Assignments. In both these areas , there was a reasonable degree of satisfaction in practice (score 2.09)

The concept of self-support groups as a valuable psychological and practical to Open Learning groups gains surprisingly little support with rankings well below 4.0. Undergraduates , who were on the College premises for the remainder of their taught courses , appreciated the facility of drop-in tutorial support but the logistics made this near impossible for part-time students. The suggestion of a newsletter gained little support.

SECTION 5 - USE AND COMPREHENSIVENESS OF MATERIALS - RESULTS

	Rating			Experience		
	Under grad	Post Exp	Post grad	Under grad	Post Exp	Post grad
The supplied material should:-						
Include the basic issues only, with suggestions for further study	2.96	2.30	3.00	2.70	2.20	2.00
Be total, requiring no other sources	2.92	2.95	3.27	2.85	2.20	2.55
Cover enough information to enable you to achieve a basic pass only	3.07	2.95	2.18	2.78	2.45	2.64
Be instead of lecture information	2.33	1.85	2.27	2.89	2.65	2.18
Be a supplement to lecture information	3.37	3.40	2.55	2.11	1.80	2.64

Results here showed few clear cut patterns with the range of mean scores quite narrow. Those less experienced in Open Learning (Undergraduates and Post-experience) considered that Open Learning should only supplement lectures , covering enough to give a basic pass , whilst Post graduate students were much less sure on these issues.

Nor were the results in practice any clearer with only the post-experience group demonstrating their dissatisfaction that the open learning was not supported in any way by the lectures.

Discussion and Implications

Common experience shows that students faced with Open Learning respond in different ways. Some welcome the freedom from lectures, the increased degree of self-managing and the novelty of dealing with new learning materials. Others are uncertain at the lack of contact with tutors and fellow students , are fearful at the weight of materials that bear down on them, day and evening and find detailed time-management an unusual and elusive skill to pin down.

These varied responses may be exacerbated by the student's own situation. A student who joins a conventional undergraduate course and then finds one of the modules is taught by Open Learning would have a different response to a student in a full-time job whose Employer discourages regular time off work and therefore has no option than an Open Learning package to obtain the desired qualification.

Our research has shown that these CONTEXTUAL variations are reflected in part by different perceptions. The demand for Telephone Tutoring is high for Post-graduate students , low for the other groups. Full-time Undergraduates are not so concerned at being able to study whenever they like whereas this is a much more important feature for part-time students where time is at a premium. Tutorial support on a drop-in basis was simply not feasible for Post-graduate students .

Having said this , these contextual variations played a limited part in the results. There was a remarkably high degree of perceptual similarity between the three groups.

The ranking for tutorial support , for example , demonstrates this clearly :-

	Undergrad	Post-exp	Post-grad
Tutorial support	2	1	3
Effective guidance	1	2	1
Suitable Counselling	3	3	2
Help for support groups	5	5	5
Tutor support on a drop-in basis	4	4	6
Telephone support	7	6	4
Newsletter support	6	7	7

Ranking comparisons for the other questions follow the same pattern

So what is it that students really want ?

OVERALL RATINGS

(n = 58)	Total	Mean	Pos'n
Effective guidance at the start of the course	221	3.81	1
The materials must be relevant to the course	220	3.79	2
The materials must be up to date	214	3.68	3
Tutorial support on a fixed one-to-one basis	206	3.56	4
It must allow me to go at a faster pace if l like	205	3.53	5
It must allow me to go at a slower pace if l like	204	3.52	6
The materials must have been piloted before use	203	3.50	7
The system must allow me to study whenever l like	193	3.32	8
It must allow me to test myself as l study	193	3.31	9
The materials must be a supplement to lecture information	187	3.22	10
It must allow me to study wherever l like	186	3.20	11
Suitable counselling prior to starting the module/course	184	3.16	12
Tutorial support on a drop-in basis	179	3.08	13
The materials should be total , requiring no other sources	174	3.00	14
The materials should look professional	172	2.96	15
The materials should cover enough information to enable me to achieve a basic pass	168	2.90	16
Help in establishing support groups	164	2.83	17
Tutorial support by the telephone	161	2.78	18
The materials should cover the basic issues only with suggestions for further study	159	2.74	19
A newsletter type of support	138	2.38	20
The material should be instead of lecture information	125	2.16	21

(This table has joined the RATINGS from the 58 students for the 5 questions onto one table for all groups into order of magnitude).

To meet these perceived students' needs , we have constructed the Prescriptive "5 Cs" model and secondly , the **Support Pack.**

5 Cs Model

For this model , the first 12 requirements have been extracted and grouped into 5 categories. :
>   **CONFIDENCE**
>   **COUNSELLING**
>   **CONTRACT**
>   **CONTEMPORARY**
>   **CONTACT**

(1) Confidence

Most students enter education with a mixture of fear and anticipation. `For Open Learning , this can be more extreme in both cases. To be successful , there needs to be mutual confidence that the course can deliver the students main objectives particularly in achieving a qualification. So the materials must be RELEVANT (ranked 2) PILOTED (ranked 7) and the students must be able to TEST THEMSELVES (ranked 8) Students can be unforgiving in a new medium if they doubt its relevance to the course or they find mistakes that impede their progress. Not knowing how you are progressing is equally frustrating.

-" I cannot see the relevant of MIS materials to a Personnel Management course or to my own development "
" There were errors in the workbook which were difficult to identify "
" I would have preferred more material which would have allowed me to test my knowledge in relation to the standards required at examination. "
" There was no way of telling that I was learning at the right speed or the right things "
" Materials help test retention of information but not understanding "

Tutors, therefore , cannot lightly introduce materials that have not been extensively piloted and tested , even in a very limited area. Irrelevant materials (acceptable as a diversion in a lecture) must be discarded in the Open Learning context. An effective self-testing facility must be included as an essential feature.

(2) Counselling

A growth industry exceeded only by Management Consultancy in recent years, Counselling is vital in two areas. Firstly , to ensure that students know what they are committing themselves to BEFORE they start the course (rank 12) For undergraduates , the delivery method must be made abundantly clear for optional modules . Part-time students must be assisted to weigh carefully the options of taught and open learning approaches from cost/benefit and personal style viewpoints.

Most important of all , in the students' eyes, is the GUIDANCE AT THE START of the course (ranked 1) The importance of a clear explanation of the requirements and mechanisms of Open Learning cannot be over-estimated By its nature, contact is limited so if the introduction is ineffective, then the likelihood of students facing difficulties is greatly enhanced.

(3) Contract

A vital feature of the introductory counselling is the production of a learning contract between tutor and student. This must allow a student to study at a FASTER PACE (ranked 5) or a SLOWER PACE (ranked 6) This is not quite so easy where there are fixed Assessment deadlines. For Open Learning , tutors need to consider optional deadlines . For example , students can choose on the IPD Flexible programme whether to take one or more National Examinations early or defer one or more. However , such arrangements add to the burden of administration for the tutor and can give too many delaying options for the weaker student.

The contract must also ensure maximum freedom for the student to study when he/she likes (ranked 8) and where (ranked 11). Library and home study facilities generally provide only exceptional problems.
Computer-based materials , on the other hand , are a different matter.

" incompatible software makes it impossible to study where I like. It is frustrating when I am told to use the Central Library and then come back to the Management Library and the work is not compatible. Especially when it is your day off."
" Very poor in general - little consideration of the student - expected to go to College to use Computer system - 42 mile round trip "

These issues are currently being resolved via a cross institutional rationalisation programme of the IT system, its networking and its software in addition to the longer term, knock on advantages to be gained from the Internet and teleworking.

(4) Contemporary Material

Lecturers aim to impart up-to date material and are poorly regarded if they do not deliver in this regard. Open Learning materials have a major difficulty here as perceived by students if they are not UP -TO -DATE (ranked 3) and it is not easy to rectify. Such programmes are very expensive to commission (the IPD's package cost in excess of £2 million in 1989-91) and have additional costs if an updating element is included. The IPD are currently debating the cost/benefit of providing such a service. Whatever the situation , tutors must build the cost of updating seminars in their programme.

" Legislation has changed rapidly during my time on the course and therefore we are learning incorrect information."

" It is very important in this course that up-to-date material is used. However , 1 do appreciate that some things may change too quickly for material to be absolutely up to date "

(5) Contact

Open Learning cannot exist in a vacuum. The higher failure rate on Distance Learning programmes is often due to the isolation of the student, although the recent findings from the Oxford Brookes University indicate this is not always the case in a mixed mode setting where open learning is utilised with the support of seminars and tutorials . Thus the students require support , especially on a regular ONE-TO-ONE basis (ranked 4) and this must be built in , despite any logistics problems. Where students cannot be away from work , then tutor visits should be considered. For example , the writer arranged 4 individual 1-hour tutorials at different Central London locations in a day when students could not be away from work. Linking the course through group lectures on a regular or sporadic basis is also vital (ranked 10) It allows students to meet together (support groups are difficult to engineer and not seen by students as a priority) and can ensure the updating required. For undergraduates , drop-in tutorials may be a necessary feature while telephone contact is essential for those whose course is entirely Open Learning

" The course was fine but could have done with a couple of lectures "
" 1 would really like to have talked to the tutors more often on a face-to-face basis"

SUPPORT PACK

A comprehensive open learning support pack for staff at the University of Luton has been developed within the Centre for Educational Development. Amongst may other features, it includes a set of questions to staff members intending to introduce some open learning into the existing or proposed undergraduate or postgraduate programmes. The range of questions sets the emphasis for supporting the philosophy that the student comes first by enabling the staff member to decide as to where the proposed learning support fits within a continuum ranging from "more" to "less" appropriate. The questions relate to four key areas; general issues, University issues, staff issues and student issues. Collectivelyand individually, they all impact on putting the student first.

IS THE PROPOSED PACK ?

	More appropriate to open / flexible learning	**Less appropriate in the current form**

General Issues

Are you attempting to:	find a package for use within a module	design a module around a package
Is the pack available:	for multi-student use	for single student application only
Is the pack:	copyright free	not copyright free
Will the pack:	facilitate student centred learning	utilise didactic processes
Will the pack:	allow students to sectionalise information studied, within a total learning programme that facilitates integration	require the student to study large chunks of information

University Issues

Will the learning:	allow the University to make more effective use of its accommodation resources	require the University to provide inflexible accommodation resources
Will the change in emphasis:	be funded and resourced appropriately to establish it	have no financial support at any stage
Will the packs:	enable the University to respond more positively to demographic trends	restrict the University's ability to respond to demographic trends
Will the system:	be more cost effective per capita by a known point in time	cost more per capita
Will the pack:	be maintained as an up to date collection of documents	become out of date
Will the system as designed and marketed:	encourage regional and national recruitment	encourage students to go elsewhere
Will the packs:	allow the University to enter new markets	reduce the existing total market or market niche
Will the learning:	facilitate enhanced access to under represented groups and individuals	maintain the status quo as regards student types or prevent some potential students from participating

Is the pack:	an alternative to a taught strategy	a supplement to a taught strategy
Will the system:	be accounted for within a QA system	not be subject to quality
Will the technology utilised:	be a supportive medium	be a threat to study and learning
Will the system:	enhance local needs	have no relevance to local needs

Staff Issues

Will the staff/ tutors:	be available / accessible to the students at all reasonable times and/or via systems such as E-mail or voice-mail	only be available at pre determined time slots
Will the staff/ tutors:	be enabled to utilise the time savings to extend scholarly activity, to support students with extra learning needs and to develop further packs	be demotivated, as time saved is used to provide more contact time in other programmes
Will the staff/ tutors:	have access to information about the complete programme	be working in isolation from other modules/staff members
Will the staff/ tutors:	be motivated	be demotivated
Will the staff/ tutors:	be supported by staff development, appropriate to the needs of tutoring rather than lecturing	have no opportunity for staff development support

Student Issues

Does the programme/module :	allow the student to start/finish at any time	require the student to start/finish at fixed points in the academic year only
Will the student:	be motivated	be demotivated
Will the student:	be encouraged to interact throughout the process of study	be concentrating on receiving data only
Will the student:	receive effective guidance as to study within a more open/flexible programme	be left to sort things out him/her self

Does the pack:	contain information for the student on issues such as guided reading, assessment and reading synopsis	only contain subject content
Does the pack enable the student to :	attend with time flexibility	attend at prescribed times only
Does the pack enable the student to carry out his/her studies	at least partly away from the University	only within the University
Does the pack enable the student to undertake his/her studies	with a degree of flexibility in sequencing, i.e. not restrained by excessive pre requisites	within a rigid pre requisite sequence of activities and learning

Will the student:	have the opportunity to negotiate to some extent as regards objectives, content and learning method	be required to study within a prescribed programme of objectives, content and method
Will the packs:	provide visually or conceptually dense information appropriate to the level of study	be inappropriate to the level of study
Will the student in using the pack:	gain grater access to national and international expertise	receive less access to professional knowledge and expertise

Will the student:	be encouraged to reflect, analyse and evaluate according to the level of study	be inappropriately directed with no reference to the level of study required
Will the student:	have the opportunity and support to acquire appropriate skills as well as knowledge	have no opportunity to develop necessary skills

This survey related to findings of 58 students in three faculties. Although neither a large nor a fully representative sample, it does provide valuable data for evaluation that provides further guidance on dealing with the continuing trends towards issues in higher education such as the extension of supported open and flexible learning alongside the associated growth of student centred learning and resource based learning.

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A Learner-Centred Approach to a Very 'Special' Program

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(Please note this paper is being offered as a personal contribution)

I have just returned from a meeting, the result of which will be the design and subsequent delivery of a distance program which places learner needs at its very centre. The meeting was held in a small, isolated town on the South Coast of New South Wales. It took place in a classroom at a Central School which caters for students from kindergarten to year twelve. The participants included several school teachers, the distance teacher (me), who had flown up from Sydney, a parent, a tutor and the student. The student was very shy. Most of her responses were 'I don't know' and her speech was hesitant and not always very clear. Anne is fifteen years old, and has an intellectual disability. In addition, she has a speech difficulty and is physically small and frail. (Her name and other details have been altered to protect her identity.)

The purpose of the meeting was to determine the direction of Anne's transition, at the end of her school years, into her community. As the meeting progressed, each team member identified and undertook areas of responsibility to address the needs which emerged. As her distance teacher, my role is straightforward in that I will continue to produce meaningful material in the areas of Literacy, Numeracy and Living Skills.

What will not be quite so straight forward is the delivery of these materials and the co-ordination of the other members of this team. After all I am based several hundred miles away from the learning site. In this, the challenges are not all that different from those of any other distance educator.

Anne's reading skills are limited. She is not a self-directed learner. Neither is she a risk taker, and she needs constant motivation, revision and one-to-one support. Although I am based in Sydney, it is very much my responsibility to address these delivery needs. Anne has some tutor time during which a Teachers' Aide is available to supervise and direct her learning activities. This is limited to no more than a few hours a week. For the rest of her school day she is in classes with her age peers. The organisation of meaningful learning for these sessions is potentially impossible!

However, I am getting ahead of myself. I want to trace the development of this learner centred program, a unique opportunity available to isolated students with special needs that cannot be met locally. My digression was in order to draw your attention to some of the difficulties we faced in its conception.

My involvement with Anne started long before yesterday's meeting. It began with an enrolment application which clearly stated her disability, and lack of appropriate local services. These two

factors are what brought us together, she fulfilling enrolment criteria, me with a small space in my class and a big interest in her details. At this stage there was no money allocated to support Anne's program, and this meant that she had no tutor at all. I was intrigued as to why we were accepting her. After all, if she could follow a program without a tutor she wouldn't need my type of intervention!

A further digression is called for at this point to explain briefly what my 'type of intervention' entails. I work for a department of distance education which caters specifically for school aged students with intellectual or sensory disabilities. I have taught by distance children of all ages and with a wide variety of abilities. I have taught a profoundly deaf student and one with deteriorating vision. All my students are isolated, either in their homes, or in rural schools, and all have no access to an appropriate local Special Education facility.

Some are supervised by the mother, who may (or may not) have had many years of experience with distance education. Others are supervised in school by a tutor, either a paid Teachers' Aide, or a volunteer from the community. The skills and experience of these tutors and the supervision arrangements are as varied as the students themselves..The program that is written by me (or my colleagues) relates specifically to the needs of the child within the supervision provided. Thus, for a home student, all Key Learning Areas are catered for, and for a school student the areas are determined according to student need and availability of supervision.

The presence and absence of a tutor to supervise and implement the programs is a key factor in determining the success of an enrolment. How we as teachers work with, support and train those tutors is another key factor. The whole supervision issue is one which is under constant discussion and scrutiny. Hence my reaction to Anne's enrolment.

My first call to the school explained all. Never have I had the privilege of dealing with more determined or dedicated teachers. The message to me was, 'you prepare the material and we'll ensure it gets taught'. What in fact was being proposed was that each of Anne's subject teachers was to attempt teaching their subject to the class and teaching Anne's special program to her, all at the same time and in the same place. I was convinced. If they were prepared to give it a go, then so was I.

During this first school contact I confirmed the subject areas we would target, namely, English, Mathematics and 'Living Skills'. (This latter area was taught under such umbrellas as History and Geography, in other words, wherever an interested teacher was available.) My next task was to examine the enrolment forms again to gather information about Anne's interests and abilities. As teachers and parents are invariably optimistic about ability levels, the teacher needs to find out these independently. This assessment formed the basis of Anne's first set of work, that and lots of 'getting to know you' activities. These were accompanied by copious instructions to the band of teachers as to how to present the material, report on it and send it back. How these were interpreted is another story, one on which there are many variations, for no matter how clear my instructions seem, there is usually a creative alternative.

I awaited the return of these early sets with morbid fascination. I simply could not see how this

arrangement would work. Despite my 'copious instructions' the material arrived back slightly out of sequence and inadequately packaged. However, the work had been completed, and the teachers had given thorough and useful feedback on what worked and what didn't. I was full of admiration, and managed to organise a visit to the school to convey that personally. I was at once impressed by the caring attitude of the staff. The teachers went out of their way to support Anne. They found tasks for her to perform to use her newly learned language items. They set up strategies whereby she learned procedures for getting help with her distance material. They encouraged her parents to go and discuss any manner of problem with them. Above all they were realistic in their expectations, not expecting too much, but not accepting too little either. Juggling this extra responsibility with their routine teaching, playground duty, sport coaching and everything else that is a teacher's lot, they even found the time to meet with me, and thanked me for my support.

At this stage, Anne was still building on her literacy and numeracy skills in a very general way. She learned how to scan, review, research and take notes. She learned the four basic number operations, and how to use a calculator. She learned how to offer the correct amount of money in a transaction, and much more besides. All her learning activities were written by me, based on what she could do and teaching her the next step. The activities were personalised as well as individual and related to her and her community. Poor Anne didn't know whether to laugh or cry the first time I used a scanned photo of her in an activity! She was quite tickled with it, but had picked up enough peer group behaviour to know that having your photo taken simply wasn't 'cool'. However, we were all very fortunate that there were never any peer problems regarding the fact that she did 'different' work. Overcoming negative attitudes is very difficult, and is a common enemy of my programs elsewhere.

You can see from what I have shared thus far that Anne's program last year was pretty learner centred in that it was geared to her needs within her situation. This year however things have changed a little. The allocation of the tutor is a great bonus as it means that Anne can leave the school premises and learn first hand the survival skills she will need in the years ahead. So far she has learned to make a phone call from a public phone box and can access emergency services. Some paper and pencil preparation for this task was completed in school, but the true assessment of her ability to complete the task was performed 'hands-on'. And that brings us up to date, to the meeting I attended yesterday and the decisions that were made at it.

I have already mentioned the team members who attended the meeting. Missing from the group was the Transition Liaison Officer, whose role it is to advise and direct transition plans for students with disabilities. This initiative commenced this year. Its conception was promising, but in reality these positions are too few and thus stretched too far. The Officer mailed some useful material to the school, but could not be present at our meeting.

We used the material as a guideline for our meeting. First we talked with Anne's mother, encouraging her to address the issue of her daughter's future realistically. We discussed the type of work that Anne would be suited to, and considered the matter of where she would live. It is very hard for parents of young people with disabilities to accept the fact that they will not always be able to care for their offspring. This subject needs to be handled with delicacy, and is an

ongoing process of attitude change. Quite a lot of ground was covered at this first transition meeting, and we identified areas of potential employment and opened up the idea of semi-independent living.

Already I was jotting down ideas for future learning activities. Anne will be eligible for a small amount of money soon and we talked with her about what she would like to do with it. She brightened up at this section of the meeting, and had some ideas about clothes, compact discs and magazines that she would instantly acquire. We digressed a little to the subject of board and the implications of overspending, and we could see her mind starting to work around this unforeseen inevitability. Thus the beginnings of Anne's Mathematics program began to emerge.

We moved on to the suggestions that her mother had made with regard to employment. These were realistic and achievable in that it was suggested that Anne may find employment in a hotel or restaurant , performing kitchen tasks and setting tables. Anne was quite happy with this idea as she helps out a lot at home, and she quite liked the thought of setting tables and arranging flowers and table linen. This brought us to the subject of Work Experience, and at this point we stopped for coffee and to review where we were up to. While the coffee was being served, one of the school teachers left to make a few phone calls. When we got back to the business in hand, he had located a small restaurant whose staff were prepared to take Anne for several hours a week to learn the tasks of the casual help. This restaurant was close to where I was staying for the night, so I volunteered to have dinner there, check out the skills Anne would need, and talk further with the proprietor.
Our next task as a team was to try to determine some leisure activities that Anne could pursue, thus giving her some social contact and also developing some skills which would give her alternatives to watching television. We identified several, including an outdoor activity, a craft activity that she could follow up at home, and a group where she could help out with younger children. This program would give her fresh air and exercise, social contact and opportunities to develop confidence and a sense of her own worth. She would also have the opportunity to use communication skills and travel skills.

This is itself opened up another section of Anne's program needs for 1995. I would need to teach her strategies for handling interpersonal interactions with a variety of people. I would need to set up activities which would assist her in travelling safely to the next town.

So far everything was falling into place quite nicely. Although somewhat daunting, I had the beginnings of Anne's Mathematics and Living Skills needs and could commence preparation of activities accordingly. I was not unduly concerned about isolating specific skills in the area of English. Her Living Skills program would involve reading, and most of her responses to me would be written or taped, thus covering the Key Learning Area of English adequately (reading, writing, listening and talking). I would continue to send a variety of literature for Anne to enjoy.

It was becoming evident that there were many overlaps of subject matter, but as the end result is for Anne to participate meaningfully in her community, I was not going to be side tracked by what fits where. Anne's future will not be segmented into subject areas. It will be an integration of all her learning. In this we are fortunate in being able to develop this individual program for her that

is not curriculum led.

Anne's mother agreed to follow up on the allocation of 'pocket money'. Anne will be encouraged to use the school bus more often and not to rely on her mother to drive her to school every day. She also agreed to check out some of the social events we had discussed, and to support our program objectives at home wherever appropriate. Teachers who would be overseeing Anne's learning experiences are now aware of what we will be targeting. As they have helped to identify Anne's needs they now feel they have an even greater stake in the overall program and its outcomes. They too undertook to follow up a few enquiries for us.

Anne's tutor will locate timetables, and will also reschedule her time with Anne to be flexible for our Work Experience sessions. The tutor will assist in the early stages by being on site with Anne, and withdraw her support as she gains confidence. Thus she needs to free up her other commitments accordingly. I agreed to put together a program which will teach the new skills and set up ways to practise and report on them. We all settled on a review date to be confirmed. My attendance at the next Individual Transition Plan meeting would probably be by phone, but I hope to be at the final meeting for 1995.

My work in the area was not quite finished. I had dinner in the restaurant as agreed, and spent a fair bit of time explaining my role to the proprietor. He was very willing to support Anne, and I found that I had to present her as an asset to the restaurant, rather than being a passive observer. It was important that the staff share realistic expectations. It is very easy to be over protective of Anne. She is a small and pretty young lady who is quite good at getting sympathy. People are eager to do things for her. Together we identified some practical activities which I am quite sure she could perform competently. There were a few more I think she is able to learn. Most importantly, she must be on time, speak clearly and ask for information, and complete all tasks to a reasonable standard.

I observed the casual staff for a while and made notes about the tasks they perform. Many of these can be practised at school in the staff room, and at home, and some of the personal interactions can be explored in role play situations. Successfully teaching this program by distance was looking more and more possible!

I imagine that Anne will stay on at school for another two years. When she finally leaves I anticipate that she will have the skills to live away from home if necessary, and that includes being responsible for her own health and controlling her own money. She will have the necessary skills to apply for a job and perform the duties required of her by her employer. Travel by public transport will cause no problems. She will take an active part in her community and access the facilities available there for her social and leisure needs. I expect her to have the interpersonal skills to support this life style, including the ability to make decisions and to say no when appropriate.

In short, she will make a relatively easy transition from a supportive school environment into a community in which she takes her place with confidence, contributing and sharing in accordance with her ability. I invite you to consider what the alternatives might be.

This story has only just begun, and will no doubt be updated several times before its conclusion. However, without a learner centred approach to Anne's teaching and learning, the end would probably be very different.

TRAINING AND PROMOTING THE QUALITY
TECHNICAL PERSONNELS FOR OUT OF SCHOOL EDUCATION
(INDONESIAN PHILOSOPHY AND CONCEPTS)

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I. BACKGROUND INFORMATION

The advancement of a nation is determined by the level of education that nation has. This has been fully realized by the people of Indonesia, so that the education of the whole nation is no longer the responsibility of the goverment only but also the responsibility of the parents, the society and the learners.

The national goal of our nation, as included in the 1945 constitution, is to make an intelegent life of the nation and to increase the social prosperity.

Operationnally, this goal is clearly expressed by articles number 27, 31 and 33, which respectively is concerning the right of persuing appropriate job and life (27), the right of getting education (31), and the need of organizing economy as a mutual effort based on family like relationship.

To bring that national goal into reality, the basic strategy is developing of several field were determind in 1993 known as the Outline of the Aim and Direction of National Development. Based on those basic policies the goverment, in this field: Mistery of Education and Culture, made certain targets and programs to reach them. These programs cover: out of school education, Sports and Youth Affair.

Chapter IV on Book of Five Year Development Plan said that the objective of the programs of Out of School Education are to provide learning opportunities for the people in order to obtain fix and reasonable service of income so that, in turn, this will enable then, together to accomplish learning activities for their own.

It is estimated that during the 6th National Development Plan about 47 million people will get education held by Out of School Education Sector which the objective is to prepare them with many different skills to enable them to make their own living. About 17 million no schooling or are still illiterate, they will be assisted with simultaneus wiping out three blindnesses, with Packed "A". The application of Packet A we expect to cure blindness in term of Latin Characters and Arabic numerials, blindness in term of national language, and blindness in basic education (knowledge or functional information), and at the same time to provide the learners with skills to get their earning. And 40 million people not complete Primary School about 25% or 10 million aging 13 - 29 years who are able to read and write, be anticipating in the programme of "Kejar Usaha" (income generating learning group, that learn how to increas their daily income), and private vocational programme held by society, operate with in society and supported by society. The existance of those programme are based on the needs strongly realized by the society.

For those who are illiterate and Elementary School drop outs more and more Learning Groups studying Packet A will be set up by the goverment, which their implementations will be integrated with education for making their living. It is important to give a special explanation on what Packet A means. Packet "A" contains minimum learning materials which cover all

aspects of life (ideology, politics, economy, social, culture, defense and security). About the same level as the ones taught at the Elementary Level. They are about the same level, not exactly the same, since there are slight differences between the two. Packet "A" contains materials that are relevant to everyday life, from the learner himself, home and the surrounding yards, the neighbours, the village etc. The materials are elaborated in concentric way which more attention is paid to the learner as an important subject of any activities. On the other hand materials which stress more on intellectualities and not fully relevant to everyday life of the people in general are not included in Packet "A". This Packet "A" contains knowledges and fungsional information, skills and mental attitude needed in all aspects of life, which will support the development of the individual, nation of the country as a whole and complete integrated person who has a good morale based on the five Principles of the Nation called Pancasila.

Learning Package A is designed to meet seven elements of essential basic learning needs, as follows:

1. Spiritual values based on the belief in God Almighty
2. Sense of mutual help, sense of tolerance, acquisition of critical and logical view, and a democratic way of thinking. These attitudes are to be maintained in family life as well as in community life
3. Functional capability in reading, writing and speaking in Bahasa Indonesia and in arithmetic so as to be able to:
   - read magazines, newspapers, and booklets on agriculture, health, etc.
   - write simple personal and official letters
   - measure areas, calculate loan-interest and estate rent, etc.
4. Basic knowledge and scientific view on the maintenance of the ecosystem, relationship of sanitation and health, methods of farming and animal husbandry, food production, nutrition, etc.
5. Application of knowledge and skills on family health, family planning, child care, nutrition, sanitation, nursing, management of houshould budget, sewing, house repair, recreation, sports and other social activities;
6. Appplication of knowledge and skills to raise income in agriculture as well as in other fields; and
7. Active participation in community life; the knowledge of national and local history rights and duties of citizenship; knowledge on existing social services; objectives and functions of co-operatives, etc.

There are 100 titles in Packet "A" which are divided into 3 groups: first, series A1, up to A20 comprised of basic lessons on reading, writing, arithmatic and Indonesian Language which are all integrated and terraced. The content of A1, some will be the basis for A2 serie, and so on until A20 serie. Second, series A21 up to A60 consist of materials for first phase of intermediate level which cover basic skills and knowledges about aspects of life. Unlike series A1 - A20, these series (A21 - A60) are not terraced and they have the same level of difficulties. Series A61 - A100 are not terraced either and have one level higher of difficulty compared with A21 - A60.

The existance of those vocational programmes are based on the needs strongly realized by society, in the forms of vocational trainings on certain skills, specification courses etc. Therefore it is understandable the those vocational training grow and develop parallel to those of the society. At present there are about 13.302 courses all over the country which have been granted legal permit to operate. They are directed to support the development of the country in all aspects each of which needs different skills; and they are also expected to creates new work opportunities which, in turns, will employ productive workers. The emphasis of the Out of School education programs is providing certain skills to meet the needs of the society and improving the quality of those at all levels so that, in a relatively short reasonable time, to change the learners to be citizens with good intelligense and capabilities.

If those ideal programs can work as they are expected, then a great deal of supports have been provided in the areas if:

1. To accomodate school age children who could not attend regular schools, drop outs of any different levels and adults who are still eager to advance their knowledge and skills
2. To support in providing skills in formal education
3. To help overcome insuffisiencies and problem arising in formal education
4. To provide workers needed by the development process, especially those who are still young and skillful in order to fulfill any work opportunities available
5. To improve those workers, including those who already have individual position in the society
6. To involve in the race of science and technology which have been progressing rapidly. The number of non-skilled manpower is so great. Besides the two mentioned groups of man power there are millions of people aging over 10 years who are Elementary School graduates in the work market. The following table will give more details about it.

THE NUMBER OF POPULATION AGING OVER 10 YEARS
IN THE WORK MARKET BASED ON THE EDUCATION THEY HAVE*)

NO	EDUCATION	TOTAL
1	No Schooling	16.837267
2	Did not Complete Primary School	40.050.350
3	Primary School	47.510.162
4	Junior High School	15.194.348
	Vocational	1.928.402
5	Senior Hight School	8.618.578
	Vocational	5.239.567
6	Diploma I/II	361.409
7	Academy/Diploma III	737.701
8	University	832.465
	TOTAL	137.310.249

Note: Total Population in 1990 - 179.379.000
*) Statistic Centre : "Statistical Pocketbook of Indonesia 1992" p.46

Observing those realities we are concerned that the population on no. 1-3 will hinder the process of development, innovation and advancement in any aspects of life, especially on the creation of more and more work opportunities and entrepreneur attitude which are intensively built up by the government at this moment. These are possible when we fully consider the human factor has a key position in the development process to ensure economic growth and social stability.

Development of a nation that depends so much on financial alone may have negative implication, because such a gigantic finance to fluctualting global economy. Meanwhile the increase of the human resources resulted from the improvement and wide spread of education, improvement of public health service and public nourishment will build initiatives and entrepreneur attitude among the people; this means more work opportunitioes are provided, and of course national productivity will in turn, increase accordingly. When the development process has been able to set up such a kind of condition to the people we can positively say that the finance available and the technology implemented have donated a great number of benefit to the whole nation. Of course in order to carry out the programs of Out of School Education which include youth affairs, and sports, a lot of good staff members are badly needed, such as: tutors, monitors, youth developers and instructors on sports.

II. RECENT SITUATION ON STAFFING OF OUT OF SCHOOL EDUCATION

At the moment staff members for handling the activities of Out of School Education programs are not sufficient at all, both qualitively and quantitively as well; especially technical staffs, supervisors and staffs with proper educational background to operate efficiently the units called "Learning Centres". In this time we have 239 Learning Centres, 1.072 Technical staffs are Senior High School graduates, and 533 were graduated from Institute of Teacher Training and Education in different locations all over the country. The following tables gives us an illustration on the staffs of Out of School Education sector.

TYPES OF STAFFS, OPERATION UNIT, ALLOCATION AND STAFF BE NEEDED

NO	Types of Staffs	Units of operation	Total	Staffs Alloc. per Unit	Total Number of Staff		
					Needed	Available	Insufficiency
1	2	3	4	5	6	7	8
1	Staf whose major in education in the smallest units of education	Learning Centre	239	10	2390	533	1757
		BPKB *)	11	20	229	59	170
		Total	250		2619	592	1927
2	Administrative Staff	Learning Centre	239	17	4063	2181	2882
		BPKB *)	11	40	440	166	274
		Total	250		4510	2347	3156
3	Supervisors and Ass. Sup. for Community Education	The lowest level of Ministery of Education & Culture Units	3552	1+4	17760	3656	14104
4	Supervisors for Sports	The lowest level of Ministery of Education & Culture Units	3552	1	3552	2162	1360
5	Supervisors for Sports	The lowest level of Ministery of Education & Culture Units	3552	1	3552	1318	2204
		Total	10566	7	21280	7139	14141
6	Administrative staff in the	Capital city	-	-	1028	788	240
		Provincial	27	132	3564	2300	1264
		city Others	323	20	6460	2655	3805
		Total	350	152	11052	5743	5309
		GRAND TOTAL			42876	22957	29919

*) BPKB - Board of Development of Learning Activities

Having the situation of staffing as indicated by that table, it is understandable that reaching the determined target in Out of School Education sector of the development of the nation is not an easy thing to accomplish. There are two things we must do: regular staff recruiting in one hand, and increasing the quality of the staffs already available; in fact, those must be done stimultaneously.

III. PHILOSOPHY AND CONCEPTS ON RECRUITING AND IMPROVING THE QUALITY OF THE STAFF FOR OUT OF SCHOOL EDUCATION

Bearing the situation of staffing in mind we can understand that it is not a wise policy to take them out of their jobs and send them to study further in Institution for Teacher Training and Education located in some provincial capital city. They are working in remote rural areas, and if we do take them out there's to give more education to them, it means the whole activities of those units will completely stop.

To avoid congestion we are not suposed to apply the old traditional philosophy in recruiting and increasing the quality of staffs that is by sending them to institutions which offer training necessary for them; but a new one should be introduced instead. That is to send the education to meet them at their repective stations, or a program which is more popularly known as the distance learning. We known that in a long distance learning program a learner is trained to be an independent individuals, creative, having a high degree of self dicipline; and these are all the characteristics strongly required for those who work in Out of School Education Units.

Distance learning program for them must be carefully planned; not only copying the plans of the same distance learning program from other countries, because each Out of School Education has objectives congruent with ones of the development of a nation. So the objectives of Out of School Education in one country will or may be quite different from the ones to the other. In a developed country, Out of School Education is ussualy called "Continuing Education" which its primary objective is to prepare the learners to acquire certain jobs or to make them ready for oncoming tour of duty. Continuing Education assists someone to increase the knowledge and skill responding to fast development of the science and technology adapted by certain institution. In other words we can say that the program are organized based on the problems need sulution in that particular area; and capabilites the learners are expected to obtain upon completion of the program in order to be able to carry out their duties in the future. In developing country like Indonesia, the objective of Out of School Education tends to provide the learners with knowledge, attitude and skill in order to improve their standard of living. Those countries have been structurally poor where the people believe that the poverty they are encountering is something real natural, and it is a art of their fate. Therefore it is understandable that Out of School Education in those countries should do the followings:

1. to make the learners aware that their bad life should be improved
2. to make them aware that they have capabilities to do that
3. to provide them with the knowledge, attitude and skill in order to do that
4. to make them aware that they belong to the society and a part of it; they have equal rights and responsibilities as the other members of the society do.

Because of the four phases of activities Out of School Education has to work on, so the executives of Out of School Education have to have the following capabilities of:

1. being as motivator
2. being a dynamisator
3. being an initiator
4. being an agent of innovation
5. being an organizer
6. being a predictor of the needs of the society
7. being a facilitator of Out of School Education activities.

Besides those basic fundamentals, it is essential to consider the environment where the graduates are expected to work in upon completion. So in designing the curriculum of Out of School Education attention should be paid upon:

a. Objectives of the institution
b. Its job description
c. Locations where the graduates will be stationed

The followings are subjects necessary to be included in the programs.
1. The details of the mission of Learning Centre
2. The details of the mission of Board of Development of Learning Activities (Research Centre for Out of School Education)
3. The details of the mission of structural Technical Staff from the ones working in the capital city up to the lowest level ones.

IV. ACTIONS TAKEN IN ORGANIZATION OF DII PROGRAM FOR OUT OF SCHOOL EDUCATION IN UNIVERSITAS TERBUKA

In organizing the program for Out of School Education many personnels from different levels and specifications are involved, to make sure that the graduates are ready for use. To get the information as much and complete as possible the Universitas Terbuka conducted a workshop by working competent people from:
1. Officials from the Directorate General of Out School Education, Youth Affairs and Sports
2. Head of Sports of Provincial Level Unit
3. Head of Community Education of Provincial Level Unit
4. Head of Youth Affair of Provincial Level Unit
5. Head of Sports of Sub Provincial Level Unit
6. Head of Community Education of Sub Provincial Level Unit
7. Head of Youth Affair of Sub Provincial Level Unit
8. Sports Supervisor at District Level Unit
9. Community Education Supervisor at District Level Unit
10. Youth Affair Supervisor at District Level Unit
11. Chief of the Learning Centre
12. Staffs of Board of Development of Learning Activities

The workshop also discussed
1. Mission and function of each institution
2. Detailed mission of each institution
3. Expected capabilities obtained by individuals working in each institution.
   (The following attachements provide examples about it).

First, missions of each institution was elaborated into details, then scores were given to capabilites a worker should master. Tasks/missions that must be accomplished the score is 10 points, while the task which are less urgent set a score of 1 point. Finally recapitulation on all capabilities a worker should have was made. The matrix here will explain further about that.

MATRIX OF CAPABILITES AND THE WEIGHT OF
EVALUATION TOWARD THEM IN EACH INSTITUTION

No.	Expected Capabilities	Score			
		Techn. Staff of O.S.E.	Learni ng Centre	Board of Devel. Learn. Act.	Total Score
1	Identification of problems, the needs and learning sources for Out of School Education activities	10	10	10	30
2	Making plans of annual program of activities of O.S.E. for the society	10	5	8	23
3	To carry out the O.S.E. programs in the society	10	7	8	25
4	Identification of executers of O.S.E. activities	10	8	8	26
5	Making plans of education/training for tutors of O.S.E.	5	10	10	25
6	Executing tutor training/education for O.S.E.	2	10	10	22
7	Making evaluation on teacher training and O.S.E. for the society	10	10	10	30
8	Writing technical guide book, guideline on execution of tutor training of O.S.E.	-	5	10	15
9	Identification of learning equipments for learning groups	10	-	-	10
10	Developing learning equipment for tutor training and learning groups	2	10	10	22
11	To try the learning equipments out for tutor training and learning group	3	8	10	21
12	Being able of referring of O.S.E. programs to other programs which are relevant	-	6	6	12
13	Conducting a research on O.S.E. activities	-	-	7	7
14	Conducting a counseling and evaluation on O.S.E. activities	-	-	7	7
15	Setting up lab site, maintaining and developing it	-	10	10	20
16	Monitoring, supervising and evaluating O.S.E.	10	9	8	27

After the total score of each experted capability was collected then the scale of priority was determined which capabilities should be acquired by the graduates of the recruiting activities we were planning for Out of School Education, whether it is Diploma or S1 degree. Based on that priority, the curriculum of Diploma and S1 degree program for O.S.E. in Universitas Terbuka then was established, which allows the students to select the subject he/she desires to support his/her capabilities. It is determined here which part of the subject and how much of it should be taught. Following the compection of the curriculum then the discussion was directed toward the outline of teaching plan of each subject. Learning material writing were also included in this discussion to made sure that no overlaps would occur or the possibility of missing some essential parts of the subjects. Our deep concern on those are based on our understanding that O.S.E. program is a totality of capabilities which are supported by sciences; it doesn't consist of several individual sciencest with no relation one with the other.

V. CONCLUSION

That is all about philosophy and concepts on recruiting and improving the quality of the staff for Out of School Education. Those philosophy, concepts, and steps taken on program construction will be relevant to developing countries with handicaps on geography and finance which Indonesia has had.

ANALYSES ON DETAILED TASKS AND EXPECTED CAPABILITIES OF EDUCATIVE STAFF OF OUT OF SCHOOL EDUCATION, YOUTH AFFAIRS AND SPORTS

TECHNICAL

EXECUTIVE STAFF

	JOB DESCRIPTION	EXPECTED CAPABILITIES

EDUCATIONAL STAFF FOR
 	
EDUCATION FOR SOCIETY
	1. Making annual activity plans for education in the society which is responsible for
	
	2. Controlling as well as guiding the execution of curriculum for society education which includes: methods
	
	training aids, in order not to deviate from the rules governing it
	
	3. Controlling, as well as guiding technical staff of education for the society.
	
	4. Controlling as well as guiding acquisition, use, and maintenance of training aids of education for the society.
		1. Being able to make anual activity plans hebased on the following skills:
		  1.1. Collecting data/information on social-economic condition of the society including life supporting pattern/earning, and analyzing them. of presentation and the use of
		  1.2. Identifying the problems and the
		  1.2. need to learn of the local society and target groups with specific needs.
		
		  1.3. Unidentify learning sources (people, fund, facilities, habits, institu-technology) which will support learning activities of the education for the society.

5. Controlling as well as guiding co-operation/termwork between organisation/institute/body of education for the society with the goverment offices and the society in general

6. Evaluating the results of the application for the society.

7. Assessing the efficient uses of the facilites/equipment for the education for the society

8. Evaluating the efficiency and effectiveness of the results of the education for the society.

2. To be able to arrange learning programs of education for the society which are responsive to the learning needs of target groups which have been unidentified.

3. Being able to motivate the society in general and the target groups of the education for the society as well.

4. Being able to attract learners and learning sources appropriate to the programs being prepared

5. Capable of organizing learning groups appropriate to the learning activities being programmed.

6. To be able to lead intraction of learning teaching process within the groups, including the way of presenting the material and the use of the training aids.

7. To be able to monitor and also evaluate activities of the groups, assisting them technical help, the tutors, and systems of reporting.

8. Being able of referring the programs of education for the society to other inter-sectoral programs that have relevancy.

EDUCATIONAL STAF

FOR SPORTS

1. Making annual activiting plans

2. To control, including giving directive, on the executions of sports activities which cover the types of sports, the methode of training in order to keep the programs run on the right track.

3. To control, including giving directives, sports technical staffs in his society

1.1. Being able to identify:
- social condition, economic, culture and geographic the needs of the society (which supports participants
- targets of the program (age classification interest and talent)
- supportive factore (facilities available, programs prepared by the goverment) to activate intructors.
- sports leaders
- relevant programs made and excented by other institutional (National Sports Committee to KONI, Sports Top Organizations, Youth Centre)

1.2. Being able to make programs of Sports where he is assigned.

1.3. Being able to determine criterions on which sports activities priorized.

2.1. To be able to approach the people and convince them on the meaning functions and benefits of sports.

2.2. To be able to activates the people and participate in the sports programs.

3. To be able to recruit skilled staffs on sports to become activators, instructors, and sports leaders at that area.

4. Guiding and controlling the use of sports equipments

5. To activate the formation of learning groups and maintains them

6. To control, including guiding and evaluating, the relationships among sports organization, goverment

7. Evaluating the effecturness and efficiency of the execution of sports activities

8. Evaluating the proper use of sport

4. To be able to obtain, developers, distributes, uses and maintains all sports equipments.

5.1. To be able to form sports learning groups

5.2. To be able to guide them

6.1. To be able to cooperate both vertically and horizontally in the building up of sports organization

6.2. To be able to evaluate and develop sports organization

6.3. Being able of making reference on program activity with other sector/institution which are related to each other

7. To be able to apply criterians of the success of cultural activities

8. To be able to apply criterians of the proper use of the equipment

EDUCATIONAL STAFFS OF

YOUTH AFFAIRS

1. To arrange annual activity plan
on Youth Affairs including the
school students based on
education

1.1. Being able to identify:
- The social conditions, economics, cul-
tural and geographic
identification of resources on

- targets of building up (age classifica-
tion, talent, interest, occupation
and basic education)

- supporting factors (parents, the en-
vironment, relevant government programs)

- sources of education (men, materials
available, geography, culture,
institution and provided technology)

- the needs to learn during the face
time, interest and talent development,
and making the learness ready for
work in the future

- programs which are relevant to Youth
Affairs

- the need of activity equipment

1.2. Being able to make programs of Youth Affair
activities

1.3. Being able to determine criterians for
selecting priority of Youth Affair
Activities

2. Controlling, as well as guiding
the execution of Youth Affair
activities, which includes:
methode of the use of supportive
equipment inorder not to durate
from the regulations

2.1. Being able to make appropriate approach
to youth.

2.2. Being able to convince the goverment
bodies related on the importance of Youth
Affair activities

2.3. Being able to apply appropriate techniques
of giving guidance to the youth inorder
to be willing to work.

3. Controlling and giving guidance in
the acquisition, the use and
maintenance of equipment for
building up the youth.

3.1. Being able to recruit skillful staff
for building up the youth in the quali-
ty of "guide"

3.2. Being able to monitor to give tech-
nical guidance.

4. To make possible the formation of
learning groups of youth, and
maintaining and developing them.

4.1. Being able to form learning groups
4.2. Being able to guide them
4.3. Being able to maintain the existence
of those groups in order to reach the
successes.

5. Controlling, as well as guiding in
the acquisition, the use and the
maintanance of equipments for
building up the youth.

5.1. Being able to acquire, develops, dis-
tributes and supervise training
equipment.

6. Controlling and maintaining good
cooperation among youth organiza-
tions, government bodies, bussiness
would in that area and all the society.

6.1. Being able to cooperate horizontally
in the framework of youth affair
programs.

7. Evaluating the results of youth affair equipments.

7.1. Being able to use the criterions for the success of youth affair program.

8. Evaluating the effecient use of use affair equipments.

8.1. To be able to evaluate and develops youth organization

9. Evaluating the efficiency and effectivity of the results of the building up of youth including the building up the school children.

9.1. To be able to implement principles of efficiency and effectivity on youth affairs in order to evaluate the results

10. Evaluating the relations between youth organization on one side with government bodies and bussiness enterprises on the other

10.1 Being able to Apply Success criterions on the relationship between youth organization with other related bodies

11. Reporting the results of the executio of his tasks to the brack office of Ministery of Education and Culture, sending one copy of it (and the Attachements) to the Head of Youth Affair Section of the Office of the Ministery of Education and Culture of higher level.

11.1 To be able to prepare reports on the youth activities in that particular area

EDUCATIVE STAFF FOR

LEARNING CENTRES

1. Having the capability to educate and to train educative technical staff working for Out of School Education,

2. Collecting, handling and classifying data, interpreting and evaluating information for the executions of the programs for tutors of Out of School Education, Youth Affairs and Sports.

3. Setting up yearly programs of activities

4. Making planning concepts and programs for the execution of Learning activities for tutors of O.S.E., Youth Affairs and Sports

1. Being capable of making the instructiors working for Out of School Education, Youth Affairs and Sports study.
He should be able to:
1.1. motivate
1.2. dominize
1.3. stimulate their initiative
1.4. organize
1.5. facilitate

2. To be able to evaluate and develope data on staffing, learning equipments and Lab site for organising programs of O.S.E. Youth Affairs and Sports.

3. To be able to programs of activities on staff training and the development of learning equipments and managing the Lab site of O.S.E.

4. To be able to set up program of activities for staff training, the development of Learning equipment and managing Lab site of O.S.E., Youth Affairs and Sports.
They are able to:
4.1. identify learning need and learning sources whithin the society for the instructors.
4.2. set up training programs
4.3. training materials

4.4. determine and to select learning
centres
4.5. determine and select learning
medias

5. Making concepts on instruction and
guide lines of the execution of learn-
ing activities for tutors of O.S.E.
Youth Affairs and Sports

5. To be able to prepare instruction and
technical guide lines for the education
of the society and the use of the equip-
ments being used by the tutors of O.S.E.

6. Prepared concepts on the arrange-
ments for the execution of learning
activities for the tutors of O.S.E.
Youth Affairs and Sports

6. To be able to make programs of activities
fased on No.5.

7. Executing programs of learning activ-
ities for tutors of O.S.E., Youth
Affairs and Sports

7. To be able to carry out activity programs
on staff training and the development of
learning equipment, and managing Lab site
of O.S.E.
Their capabilities are:
7.1. To be able togather tutors and to
interpart data on the area of Lab
site to be sociographically
7.2. Being able to develop alternatives
on area/village selection based on
7.1.
7.3. Being able to communicate in relation
with programs of innovation
7.4. Being able to build, maintain and
develop programs of activities in
Lab sites.

8. Preparing materials for evaluation on the execution of learning activities for tutors of O.S.E., Youth Affairs and Sports

8. To be able to prepare and to full in many kinds if monitoring formats and evaluation on the activities of staff training, the development learning equipments and the management Lab site of O.S.E.

9. Collecting, handling and classifying information concerning acquisition and distribution of learning activity equipments of O.S.E. Youth Affairs and Sports

9. To be able to prepare reports on the staff training and the development of Learning equipment, and the managment of Lab site of O.S.E.

10. To be able to make concepts planning and programs of acquisition of the equipments for learning activities and their distribution to the learning groups of O.S.E., Youth Affairs and Sports.

10. Being able to monitor and evaluate the execution of staff training programs, the development of learning equipment and the management of lab site of O.S.E.

11. Preparing concepts of instruction and guide lines on the execution of the acquisition of learning activity equipments and their distribution to the learning troups of O.S.E., Youth Affairs and Sports

11. Being able to report the results of the execution of the programs of:
    11.1. staff training
    11.2. the development of learning equipment
    11.3. the managmenet of lab site of O.S.E.

12. Making concepts on the acquisition
    of equipment of learning, activities
    and their distribution to the learn-
    ing groups of O.S.E., Youth Affairs
    and Sports

13. Performing the acquisition of equipments
    of learning activities and their distri-
    bution to the learning groups of O.S.E.,
    Youth Affairs and Sports

14. Providing materials for evaluating on
    the acquisition of equipments of learn-
    ing activities and their distribution
    to the learning groups of O.S.E., Youth
    Affairs and Sports.

15. Managing the Lab site

16. Reporting staff training and the devel-
    opment of learning equipment of O.S.E.
    Youth Affairs and Sports.

1. To develop any ossible alternatives of
learning activities

1.1. To identity problems and the needs to learn

1.2. To set up programs of the development of learning
activities
1.3. To carry out activities on development programs
1.4. To evaluate the process of development activities and
the results as well
1.5. To formulate the process and the results of evaluation
in the form of:
1.5.1. reports
1.5.2. job aids
1.5.3. guide book
1.5.4. instuments
1.5.5. formats

2. To develop many kinds of training models
and training patterns for tutors, builders
and instructors

2.1. To identify the need if model and pattern developments:
2.1.1. Tutors for Packet "A"
2.1.2. Manager of compulsory study program for inter-
preneurship
2.1.3. Executives of O.S.E.
2.1.4. Builder of leadership training and skill training
among youths
2.1.5. Instructor training and referce training for
certain branch of sports

2.2. To set up programs for the development of training model
and training patterns:
2.2.1. Tutor of Packet "A"
2.2.2. Manager of compulsory studies program for inter-
preneuship
2.2.3. Executive of O.S.E.

2.2.4. Builder of leadership training and vocational
        training for youth
2.2.5. Instructor training and ferece training for
        certain brack of sports

2.3. To carry out activities of development programs of
      training pattern and training model:
      2.3.1. Tutor of Packet "A"
      2.3.2. Manager of compulsory studies program for inter-
              preneurship
      2.3.3. Executive of O.S.E.
      2.3.4. Builder of leadership training and vocational
              training for youth
      2.3.5. Instructor training and referce training for
              certain branch of sports

2.4. To evaluate the process If the execution of development
      activities, and the results of them:
      2.4.1. Tutor of Packet "A"
      2.4.2. Manager of compulsory studies program for inter-
              preneurship
      2.4.3. Executive of O.S.E.
      2.4.4. Builder of leadership training and vocational
              training for youth
    · 2.4.5. Instructor training and referce training for
              certain branch of sports

2.5. To formulate the process and the results of evaluation
      on training activities:
      2.5.1. Tutor of Packet "A"

2.5.2. Manager of compulsory studies program for inter-preneurship

2.5.3. Executive of O.S.E.

2.5.4. Builder of leadership training and vocational training for youth

2.5.5. Instructor training and referce training for certain branch of sports

2.6. To reevaluate the evaluation result on the development on training model and training pattern:

2.6.1. Tutor of Packet "A"

2.6.2. Manager of compulsory studies program for inter-preneurship

2.6.3. Executive of O.S.E.

2.6.4. Builder of leadership training and vocational training for youth

2.6.5. Instructor training and referce training for certain branch of sports

2.7. To prepare manuals, executive guide and formats, instruments used in the training:

2.7.1. Tutor of Packet "A"

2.7.2. Manager of compulsory studies program for inter-preneurship

2.7.3. Executive of O.S.E.

2.7.4. Builder of leadership training and vocational training for youth

2.7.5. Instructor training and referce training for certain branch of sports

3. Developing equipments of learning activities

3.1. To identify the problems and the needs of the development of learning equipment
3.2. To set up programs for the development of learning activity equipment
3.3. To evaluate learning activity equipment
3.4. To design learning activity equipment
3.5. To conduct a try out of newly designed equipments
3.6. To formulate the process and the results of try outs
3.7. To apply those learning activity equipments, both the hardware and the software
3.8. To present the try out results in the form of:
   3.8.1. reports
   3.8.2. learning materials
   3.8.3. manuals

4. To conduct counselling activities and evaluation

4.1. Collecting data on learning activities
4.2. handling the data
4.3. Classifying the data
4.4. Evaluating the data
4.5. Preparing data for formulating technical policy
4.6. Designing concepts of plan
4.7. Designing programs
4.8. Designing concepts of manual and guide book
4.9. Designing concepts of regulations for execution
4.10. Giving counselling and evaluation
4.11. Evaluating the execution of learning programs

5. Building and developing lab site

5.1. Selecting villages for lab site
5.2. Preparing survey design and surbey design and survey instrument
5.3. Setting up instruments, trying them out and evaluating them
5.4. Performing surveys
5.5. Handling & analyzing survey results
5.6. Making recommendation on th villages selected the lab sites
5.7. Developing execution plans and programs, and building those lab sites

Computer-Aided Acquisition of Communicative Writing Skills in Higher Education

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Running Head: Computer-Aided Writing

Abstract

This article presents the results of a review of the literature questioning whether and to what extent computers can be used as a means of instruction for the guided acquisition of communicative writing skills in higher education. To answer this question, the present paper first explores the characteristics of acquiring these skills from a cognitive-psychological perspective, as well as the characteristics and behavior of expert writers. On this basis, the paper then describes whether and how computer-aided instruction can relieve teachers of certain duties associated with writing instruction, allowing them more time to perform tasks which fully utilize their unique capabilities.

KEY WORDS: communicative writing; computer-aided writing; experienced and inexperienced writers; writing teaching practice

Computer-Aided Acquisition of Communicative Writing Skills in Higher Education

School or professional writing assignments are not always greeted with cries of enthusiasm. Many people find it a protracted and exhausting activity to put conclusions, results or ideas down on paper in a coherent, logical fashion, while simultaneously keeping an eye on the arrangement of the material, sentence structure, word choice and spelling.

In higher education, term papers, theses or research reports are written forms of communication that play an important role in the curriculum. That is why in this article writing skills are defined as the ability to write argumentational and/or expository texts. Skill in writing can thus be described as the competent, functional, efficient use of written language as appropriate in a given context. By definition the writing process depends on the technology that allows writers to anchor their ideas in a more or less permanent way.

Research into writing skills has only gotten off the ground in the past twenty-five years (Van der Geest, 1992), the same period during which both writing technology and writing instruction underwent a dramatic transformation thanks to the introduction of computers.

Writing skills are a type of cognitive skill. The latter can be classified according to their level of complexity (Gagné & Briggs, 1979). Once a person has achieved a particular level of skill, he or she is ready to take on a higher organizational level or "bigger chunk" (Gleitman, 1991). The same is true of writing skills. The problems to be solved are highly complex, implying that activities must be performed at various different levels, all of which are related and influence one another reciprocally. For instance, a writer should never forget his/her readership; he/she should ensure that the argumentative structure is balanced; the writer should also make an appeal to long-term memory, set goals, and phrase sentences clearly, etc.

In this article we base our discussion on the basic premises of cognitive psychology, the most important view being that people are autonomous, intentional beings who interact with the external world, and that the mind is a general-purpose, symbol processing system (Eysenck & Keane, 1990). The article focuses on the mental processes such as they occur during the writing process. We also discuss the communicative context, which can affect mental processes, and the specific reading skills required whenever writing is preceded by a literature review. This means that we do not focus on writing as an art, but as a means of written communication involving activities such as informing, persuading, or instructing.

The article is organized in the following way. We first describe a general model of writing as a cognitive process. We then identify differences between experienced and inexperienced writers as found in the literature. Next we briefly discuss the level of writing skills as found among students in higher education, after which we explore how computers might contribute to writing instruction. After sketching various advancements in the computer world, we close with a discussion of several implementation criteria which may be important when introducing computer-aided instruction.

In this article, writing is considered a process. It is viewed as a specific form of problem-solving, within the general theory of problem-solving as described by Newell and Simon (1972). Hayes and Flower (1980) agree that almost every study on the subject of writing considers writing as a problem-solving activity consisting of a number of cognitive processes. Writing is a complex cognitive task which is susceptible to ambiguities of many different kinds, partly because of the many simultaneous cognitive demands made on the writer. In other words, writing means considering many things simultaneously, for example "is the message getting through to this particular target group"?; "is this the right goal and the appropriate phrasing for the assumed readers"?, etc.

As our point of departure for the writing process, we will make use of the most familiar model within the cognitive approach, developed by Hayes and Flower (1980). With the exception of an alternative model proposed by de Beaugrande (1983), there are apparently no other competing models. In this model, the writing process resides in short-term memory or working memory. The subprocesses are planning, formulating, and revising. The writing process is influenced by the task environment and by long-term memory, and it results in a written text. An internal monitor determines when the writer switches between the various subprocesses. We first briefly discuss the individual components of this model, and then add two components which may be equally important for the finished written product: external sources (Kennedy, 1985) and the intention of the writer (Biggs, 1988), see Figure 1.

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Task Environment

The task environment furnishes the writer with information relevant to the completion of his or her task. This environment consists of the rhetorical problem and the text which has already been written. The rhetorical problem is the writing assignment itself, whether explicit or otherwise, which should provide a clear definition of the subject, the readers and the requirements which the text must meet. In addition, the problem serves to motivate the writer; for example, he/she may want to lodge a written complaint with a hospital concerning inappropriate medical treatment. It is likely that to a large extent the rhetorical problem determines the quality of the text (Glover et al., 1990). Clear-cut assignments and knowledge of the subject, the readers, and the text type required will likely help the writer to produce a satisfactory text.

The second element of the task environment, the text which has already been written, is an important guideline for the writer. By checking what has already been put down on paper in the form of notes, diagrams and draft versions, the writer is better able to produce a cohesive text. In addition, the external storage of data means that the memory is under less strain (Glover et al., 1990).

Hayes and Flower (1980) assume that writers possess

information on a variety of subjects, reader characteristics, and different text types, which they store in long-term memory. Throughout the writing process long-term memory interacts with the external sources, the task environment, and the subprocesses in short-term memory, where information is processed (Glover et al., 1990). Such processing changes the information stored in long-term memory; new information is acquired and, if possible, integrated into the existing cognitive structures.

According to Bereiter and Scardamalia (1985), it is often difficult to call up a sufficient amount of accurate information on a subject from long-term memory. They attribute this to the fragmented nature of the material covered in the classroom and the fact that the information acquired is not used actively. When learning new material, the students generally do not make a connection between new information and old on their own; the organization of long-term memory leaves a great deal to be desired, making it harder to recall information.

Planning

The first subprocess in writing is planning. Planning is highly important in determining the quality of the finished written product. It is divided into: generating or collecting information, arranging information, and setting goals. The writer generates and organizes relevant information into a meaningful whole in accordance with the goals that have been set (Janssen & Schilperoord, 1991). He or she might do this in the form of an outline or a diagram of the text content and structure.

Formulation

The second subprocess is formulation, i.e. translating ideas generated in the planning phase into written text. During this process the writer should be aware that he or she is writing in order to communicate and that the purpose of the text must be clear without the addition of gestures, intonation, facial expressions or another context (Flower, 1979). It is very important in the formulation process to take account of the purpose of the text. The writer can, for example, describe, express an opinion, present an argument, explain, persuade, or evaluate. The word choice, too, is important and must have the appropriate effect on the reader for whom the message is intended.

Revision

The third subprocess is revision. The entire writing process is iterative in nature and, according to Kellogg (1987), revision is most effective in the initial phases. The purpose of revision is to increase text quality. This means that the text is compared with the original plan and with the writing assignment and goals, whether explicitly stated or not. Revision also involves checking sentence structure, word choice, spelling, and punctuation (Van Gelderen, 1991).

Monitor

The monitor, which functions as a sort of internal supervisor, determines when the writer will carry out the various subprocesses and makes sure that long-term memory and task environment interact. The order of the subprocesses is by no

means linear; it is recursive in nature. Writers continuously switch from one subprocess to another. They take turns planning at word level, sentence level, and overall text level. Subprocesses interrupt one another. In particular, generating ideas and evaluating and rewriting the text are processes that the writer can draw on in every other phase.

Before writing an essay, a report or a term paper, writers are frequently obliged to carry out literature reviews. This requires close investigation of external sources like books, articles, and other forms of information. Kennedy (1985) studied the behavior of students who based their writing assignment on source materials and found that the quality of their written products depended in part on the way in which they studied the sources. Students who read and studied the written sources more thoroughly, also engaged in more planning than their less able counterparts. Good writers read more actively: they underline text and write comments. They seem to interact with the author(s) whose texts they are reading. In the model developed by Hayes and Flower (1980), these external sources form part of the knowledge environment together with long-term memory, as concluded by Van der Loo (1992). The knowledge environment encompasses all the information that a writer uses when writing, including information stored in long-term memory and information taken from books, journals, or lectures, for example.

The activities carried out during the writing process and the quality of the written product are determined to a large extent by the writer's intention. Biggs (1988) concludes that there are two possible approaches to a writing task: the superficial approach and the in-depth approach, the latter producing a qualitatively better written product. In the superficial approach, writers see the assignment as a compulsory task in which they must demonstrate how much they know about a certain subject and for which they must get a passing grade. In the in-depth approach, writers view the assignment as a learning experience allowing them to integrate and deepen their knowledge of the subject. The two approaches lead to different working methods, which becomes particularly evident in the planning and revision phases.

Differences Between Experienced and Inexperienced Writers

Many researchers have observed that experienced and less experienced writers -- also referred to as experts and novices, experienced and inexperienced writers or trained and untrained writers -- differ in their approach. In the majority of investigations into differences between experienced and inexperienced writers the method of protocol analysis has been applied. The writer is asked to think aloud, verbally reproting what he/she is doing while engaged in writing. In addition to protocol, the products of the writing process have also been analyzed. The characteristics of experts and novices, and their sources are listed in Table 1 and are organized according to the component of the model they relate to: Task environment, knowledge environment, intention, planning, translating, revising, and monitor.

- insert Table 1 about here -

Present Teaching Practice

Less experienced, novice writers do not possess the component skills, presented in Table 1, to the same extent, if they possess them at all, and must acquire these if they hope to improve their writing. According to Glover et al. (1990) there are no other factors related to poor writing, i.e. IQ, motivation, or academic achievement. Present teaching practice does not offer students sufficient guidance in acquiring writing skills. This has become obvious from a variety of sources: a study focusing on the results achieved in a rhetoric program in secondary education (Oostdam, 1991); an assessment study in secondary education (Kuhlemeier & Van den Bergh, 1989; Daems, Rymenans & Leroy, 1992); research into the language skills of first-year students in higher vocational education (Baltzer, Van Schooten & De Glopper, 1989); and the complaints of employers and (young) employees in business (Daems, Rymenans & Leroy, 1991). There are a number of reasons why this is so. First of all, until recently primary and secondary education appraised literacy mainly on the basis of technical aspects: being able to read at a certain speed without making mistakes and being able to write flawlessly using well-structured sentences (Verhoeven, 1992). Very little attention was given to matters of content.

Second, many teachers in secondary education are unable to transform the importance that they themselves attach to formal writing into suitable instruction (Van der Geest, 1992). Many school assignments, for example, consist of fill-in-the-blanks or completion exercises, so that students have little practice in producing a complete text requiring them to organize the material logically (Rijlaarsdam, 1991). When students are told to write an essay, the teacher's feedback is generally in the form of red marks, an occasional stray comment and a grade. The students do get some practice, but very little instruction or usable feedback (Van der Geest, 1992).

Third, in higher education students spend more time acquiring knowledge than conveying this knowledge to others, either within or outside the academic world, even though the transfer of knowledge is one of the explicit goals of higher education (Tomic, 1990).

Fourth, instructors in higher education too readily assume that new students have already acquired the necessary writing skills or that they are capable of acquiring these skills independently. A study conducted by the Dutch Center for Educational Research on the writing skills of first-year students in higher vocational education has disproved the assumption that students can easily master the necessary writing skills (Baltzer et al., 1989). Most students performed below par with respect to both content and language use. The organizational aspect of writing was somewhat better. Consequently, Baltzer et al. (1989) argue that students in higher education must be trained to write reports with well-structured, sound arguments, so that they can avoid problems when writing their theses.

The most important factor influencing the level of writing skills of students in higher education is the amount of time spent writing during their previous school careers (Glover et al., 1990). Since research has shown that primary and secondary

education devotes so little attention to communicative writing skills, we may assume that once students enter higher education, they run a greater risk of being functionally illiterate, i.e. unable to communicate effectively in written form.

Computer Use

We may wonder whether educational practice can actually benefit from computer assistance in teaching writing skills. Two questions are relevant here: in the first place, can one teach the necessary component skills using computer-aided instruction? And second, can we relieve instructors who teach writing skills that might theoretically be performed by computers, giving them more time to devote to activities that make full use of their specific abilities?

To find answers to these questions, we discuss several advantages that the present generation of computers offers in acquiring the component skills described in the writing model of Hayes and Flower (1980). At the same time, we explore which tasks teachers must continue to perform for the time being, specifically those which the computer is not capable of carrying out, at least not yet. We do not intend to present a complete survey of all the various options and computer programs, but hope rather to answer the two questions posed above within the present-day context.

To make use of the computer in writing instruction, students have to be able to work with both the hardware and the software. The ability to use the computer supersedes all of the various component skills described in the model of the writing process, and it is a prerequisite for using this medium.

Schools have caught on to the importance of teaching word processing. In the Netherlands most schools offer instruction in "WordPerfect", the word-processing program most commonly used there (Biemans & Van Meeuwen, 1992). The Dutch Interactive Teaching Office and the faculty of Educational Science at the University of Nijmegen have cooperated in designing an instructional computer program called WP-DAGOOG. The computer is used as a medium of instruction to teach individual students in secondary education basic word-processing skills in WordPerfect, relieving teachers of a major portion of this labor-intensive task.

Some researchers have found that the use of word-processing programs has a positive influence on writing assignments. It is thought to improve text quality, facilitate revision and allow more insight into the writing process itself (Collins & Gentner, 1980; Glover et al., 1990; Van der Geest, 1986; Schwartz, Van der Geest & Smit-Kreuzen, 1992). Besides the positive impact on the writing assignment in general, various researchers have pointed out the specific advantages of word-processing programs when revising texts. Such programs make it easy to delete, replace or enter words, change the spelling and shift around sections of text. The writer consequently spends less time repeatedly rewriting the text, and can concentrate more on overall text quality (Collins & Gentner, 1980; Glover et al., 1990; Van der Geest, 1986; Schwartz et al., 1992). Not all of the research results on this subject confirm this positive effect, however.

Several programs have been developed to help writers with their writing assignment. Kozma (1991), for example, has

developed a program to aid writers in planning and organizing
text. According to Kozma (1991), the program is not effective
for improving text quality. Another example is the 'CONST'
program, a portion of which (the list of questions) can be used
to analyze writing assignments. CONST was developed at the
University of Louvain in Belgium and provides computerized,
intelligent writing assistance to students in higher education
(Beeken, 1991). It consists of functionally structured databases
and components which support and steer the text structuring
process (list of questions in the form of instruction procedures
and a diagrammatic description or visual representation of the
text structure which has been developed or selected). The
program can also be used in planning, formulating and revising a
writing assignment. 'CONST' program has yet to be evaluated, so
that the effectiveness of the program with respect to analyzing
writing assignments is unknown.

With the help of the above-mentioned program, computers can
help to analyze the technical aspects of the assignment. The
teacher continues to assess the chosen structure with a view to
the assignment goals, the assignment subject and the readers. The
above-mentioned task, teacher assessment, comes into play when
the actual contents of the text are being evaluated, for example
when teacher and student discuss how the student went about
analyzing the assignment. The teacher can ask the student to
clarify the line of reasoning which led him or her to choose a
particular structure, focusing the student's attention on the
processes underlying the product (the written outcome of the
analysis).

The students' intention when beginning a writing assignment
is largely determined by the motivation provided (Biggs, 1988).
The degree of personal attention students receive, the amount of
time the teacher spends on presenting and discussing the
assignment and the teacher's body language are all clues which
convey to the student how much importance the teacher attaches to
the assignment. As a referent, the teacher consequently has a
significant impact on the intention of the student.

The attractiveness of working with computers may contribute
to positive feelings about writing assignments (Schwartz et al.,
1992). Part of this attractiveness stems from the ease with
which users can add diagrams and tables and revise the text
(change the structure, cut and paste text, delete, alter text,
check the spelling) and the neat appearance of the finished
product. Dirkzwager and Mol (1987) have also noted positive
changes in attitude when students use word-processing programs.
According to them, students are more motivated and work with
greater concentration, and are more likely to revise texts.
There is one distinct requirement, however: the available
software must be suitable and user-friendly, and there must be
enough hardware to go around (Van Zoelen & Boekenoogen, 1992).
The changes in motivation mentioned above do not always lead to
qualitative improvements in the written product, however.

Computers can function as a flexible information medium -- a
task for which they are highly suitable -- when they are used to
gather information via a database system and hypermedia (a
combination of computers, video, CDs or laser discs, where the
computer runs the other media so that audio and visual
information can be called up on demand in random order). The
information can be tailored to an individual student's demands

and is always available. If technically feasible, the system can be expanded further. By making use of this possibility, those teachers, who are used to offering tailored information to individual students can be relieved of this highly labor-intensive task.

Several authors have studied the impact of the computer on the planning process. Haas (1989) has investigated whether writing tools have any effect on the planning process. She asked expert and novice writers to produce texts using either pen and paper, a word-processing program, or both. The results revealed significant differences between the two media: writers who used a word-processing program spent less time on overall planning, made fewer plans before beginning to write, and did less planning at the level of the entire text than those who used pen and paper. These results applied to both expert and novice writers. This is an important finding, as it is precisely planning which is seen as a very crucial process. Haas (1989) has indicated that working with computers can also be a disadvantage: the computer screen shows less text at one time, so that the writer is unable to gain an overview of the entire text and consequently tends to concentrate on smaller units, both in the planning and the revision phase.

Van der Geest (1991) has described the Computer-Aided Writing Instruction Project (COSO) at the University of Twente. One of the objectives of the project was to develop and study the effectiveness of a writing composition curriculum emphasizing planning at higher text levels, such as text content and paragraphs. This approach was supposed to counteract the negative effect of word-processing programs (see Haas, 1989). The computerized planning program did indeed prompt students to pay more attention to planning, with the result that the written products improved as well.

The computer's influence on the generating process is not always obvious. Computers used as 'surrogate teachers' during instruction have no discernible effect, according to Strickland (1987). He attributes this to instruction methods which have not been adapted to the specific opportunities which computers offer. His assumption is that the effect will become more significant when the computer is used as an intelligent hypermedium.

If the computer program makes use of a subject-specific database, then according to Gillis (1987) it can replace the teacher both in group or individual instruction. Constructing a database like this is a time-consuming task, but it only requires a one-time effort from teachers. Afterwards the computer can be used to steer the process of idea generation, exclusively with regard to a subject-specific data-base. Teachers can turn their attention to assessing text contents, taking into account which of the generated ideas have been selected (their relationships to one another and their relevance within the structure). Further evaluation will be required before we can assess the effectiveness of computer programs using subject-specific data-bases in any reliable fashion.

Glover et al. (1990) believe that less experienced writers can gain significant advantages in the formulation phase by using a word-processing program. It is precisely this group that runs the risk of focusing too much on spelling, punctuation and grammar, detracting from the attention that they should be giving to the higher levels (sections and text as a whole). An

automatic monitor at the lower levels (choice of words, spelling, grammar) might help them shift their attention to higher levels.

At the word and sentence level, the computer can be utilized to steer text formulation, for example by means of the BOUWSTEEN and COGO programs, which assist in constructing and diagramming sentences (Pijls, Daelemans & Kempen, 1987) or a computer program developed by Van der Linden which teaches students to conjugate verbs (1990). For text writing, however, it is precisely the higher levels that are important: text cohesion and the proper organization of the material into sections and paragraphs. These are levels which computers are unequipped to deal with as yet, leaving this as an important task for teachers.

A computer program which traces mistakes in texts by comparing patterns was designed by Hull, Ball, Fox, Levin and McCutchen (1987). The program concentrates on errors in sentence structure, punctuation, grammar, word choice and spelling, marking each occurrence of a particular type of mistake in the text so that the writer's attention is drawn to it. The program also explains the rule associated with the error and sometimes even shows how errors can be corrected. Hull et al. (1987) assume that many mistakes come about because writers do not apply the rules correctly. In addition, they also believe that this method not only teaches writers to correct their mistakes but also helps them to develop general analytic skills, including the ability to make rational choices.

As in the formulation phase, computers can be used to assess the lower levels of the revision phase. The assessment of the text as a whole continues to be the teacher's task. The student develops an internal monitor by internalizing the evaluation criteria applied by the external monitor and explained during feedback. External monitors may be teachers, fellow-students or computer programs. A writer's internal monitor focuses on those levels which external monitors have brought to his or her attention. The internal monitor, then, develops separately from the medium, but it is nevertheless derived from the level on which the medium is focused during feedback. The theoretical nature of the discussion in this paragraph can be attributed to a lack of empirical data.

Suppose that a writer only obtained feedback from an external monitor in the form of a computer program, his or her internal monitor only would target the lower levels of writing. These are the levels about which the computer provides feedback, with the evaluation focusing mainly on the technical aspects of the writing process. To ensure that the internal monitor also learns to evaluate text at the higher levels, the writer must receive feedback from a teacher.

New Developments in Computers

Computer programs are shifting from computer-aided instruction in individual component skills, (i.e. programs focusing on spelling, sentence structure, planning, etc.) to integrated programs that fall within the realm of artificial intelligence: word-processing programs with planning modules, techniques for adding summaries, options which allow users to take separate notes and add these to the text, help screens that can be called up while working, graphics capabilities, access to database systems and checking options. It is even possible to

link various programs, increasing the number of possibilities even further. Because such programs are still being developed, few evaluations have been carried out to date. In theory integrated programs should improve the writing process (Tennyson, 1989). One can wonder whether such advanced systems make the computer too intelligent, so that it is the computer that thinks instead of the user. The computer should offer people a learning environment in which they can use and develop their own intelligence.

Even advanced programs are of little use at the higher levels of writing, however. The underlying problem is that all of the input that the program is supposed to respond to and all of the possible feedback has to be called up into memory first. That means that a specific database has to be developed for each subject, an almost impossible task. Such programs are effective for restricted assignments which focus on a specific subject, and for which a data-base has already been designed, but run into problems when the writing assignment is open. Open assignments are hardly possible.

Because the present generation of computers is unable to cope with this enormous quantity of information, in recent years the neuronal network approach (connectionism) has attracted a great deal of attention. Until the 1990s, many cognitive scientists thought that the information-processing approach offered an appropriate explanation for human cognition. In the past decade, however, a competing framework has been established that is known as connectionism. We will describe this alternative framework only briefly within the scope of this article. The basic ideas of connectionism are that information can be decomposed into elements. Between these elements are a large number of connections. According to McClelland (1988) connectionism depicts human cognition as a network of connections between simple, but numerous, processing units.

There are differences between the information-processing approach and connectionism. First, the latter assumes that there are no particular rules that the system follows. Second, in contrast to the information-processing approach, where cognitive processes are assumed to occur in discrete phases (i.e. serially), the connectionist approach allows for parallel processing. Because many connections can be active at one and at the same time, the connectionist approach is more consistent with the functioning of the brain than the information-processing approach; the brain too is composed of many neurons that are connected to one another in various complex ways.

Until recently the computer metaphor was used to study human cognitive processing. Gradually the computer metaphor offered by the information-processing approach is being replaced by the brain metaphor (Rummelhart, 1989). For many researchers connectionism has become a more attractive alternative to explain human cognition, but also to design better computers which are better able to assist human cognitive processing. Instead of the computer, man has become the metaphor (Vroon & Draaisma, 1986). Although promising, the neuronal network approach can only be applied at the lower levels of writing skills. The approach works with programs which recognize patterns arising in a network that performs parallel processing. Unlike the usual computers which perform operations sequentially, neuronal networks are able to perform a whole range of operations simultaneously. This type

of network does not function on the basis of predetermined if-then rules, nor are such networks instructed ahead of time what they are supposed to respond to and in which fashion: they themselves seek out solutions to problems and learn by experience (Boden, 1992). As writing involves thinking and problem solving, it seems likely that parallel processing occurs during those activities (Eysenck & Keane, 1990). According to Boden (1992), the computer cannot replace the human brain, but it can help it to generate ideas. A writer might, for example, indicate a starting situation. The computer offers relevant ideas, and the writer makes a selection, in this way steering the ideas. The advantages of this approach are that the computer is able to cover a much larger and more complex domain than human beings, and that it is not limited by preconceptions which might eliminate certain ideas ahead of time.

By using computer networks, students are able to send messages to other students by electronic mail. They write for a "live" public, and that can be highly motivating in and of itself. Students can also use electronic mail to provide one another with feedback on the material covered in their texts. Note that the feedback is not given by the computer, but by the person receiving the message. The computer is used only as a transmission medium.

Implementation Criteria

Until now the article has focused on the educational psychology side of computer use. When it comes to actual implementation in the teaching-learning process, however, we must be aware of other issues as well (Van Zoelen & Boekenoogen, 1992; Schwartz et al., 1992; Suppes, 1992).

Mirande and Leiblum (1990) have developed three sets of criteria for selecting applications for computer-aided instruction: economic criteria, educational criteria, and teacher-specific criteria. Suppes (1992) has identified a number of problems associated with computer-aided instruction. These are: how do we organize instruction in writing skills when using computers; how do we teach teachers and students to operate the equipment and run the programs; how can we make use of the student data acquired by the computer in a responsible fashion (for example test results)? He has also identified advantages, however. Instruction can be adapted to individual needs. Computer-aided instruction can be cost-effective in the long run; it allows instruction to be decentralized and makes continuing adult education simpler.

Concluding Remarks

We stated that a person is considered to possess writing skills when he or she can express the message to be conveyed in written form, taking account of those for whom the message is intended and what the written text is supposed to achieve. The component skills needed to do this can be acquired in phases. Once acquired, these skills are integrated into a higher hierarchical structure (Gagné & Briggs, 1979) which is constructed simultaneously and which makes it possible to write a text that meets the requirements of the writing assignment, whether explicit or not.

Less experienced, novice writers do not possess these component skills to the same degree, if they possess them at all. They must first acquire these skills before they can improve their writing. A good internal monitor is the most obvious skill lacking, and current educational practice makes it the most difficult one to acquire.

Computer use seems to be attractive to students. Working with computers may contribute to positive feelings about writing assignments (Schwartz et al., 1992). Such feelings can be attributed to the ease with which students can manipulate their text. When students use word-processing programs, their attitude becomes more positive, they are more motivated and work with greater concentration (Dirkzwager & Mol, 1987).

One of the questions posed in the article is whether writing skills can be taught using computer-aided instruction. Most of the answers found in computer-aided writing research are affirmative. Computer use has a positive impact on writing assignments in general. A computerized planning program, for example, seems to prompt students to pay more attention to planning. Not only are the students engaged in more planning, but the effect is that the written products improve as well (Van der Geest, 1991).

Word-processing programs offer specific advantages when students revise texts. They are more likely to take on the tasks of revising text in the first place. Most research on this subject confirms this positive effect (Collins & Gentner, 1980; Dirkzwager & Mol, 1987; Glover et al., 1990; Schwartz et al., 1992; Van der Geest, 1986).

The opportunities afforded by the computer for instruction in writing are well suited to the technical aspects of the writing process. There are computer programs available which focus on component skills at the lower levels, such as spelling and sentence structure. Such programs can often bring about an improvement in these skills, but it is unclear, yet, whether the knowledge acquired actually sticks and whether the writing process as a whole improves. Someone who has no trouble with spelling may still not be able to monitor his or her own writing process, and texts without spelling errors are not necessarily satisfactory texts (Schwartz et al., 1992). Suitable software is not always available (Van Zoelen & Boekenoogen, 1992); neither is there always enough hardware to go around. Students must be able to type reasonably well and work with hardware and software. Teachers often lack the knowledge and skills needed to run computers for educational purposes, and not every teacher is convinced of the usefulness of computer use in education, so that actual use is still limited (Ten Brummelhuis & Plomp, 1993). In addition, primary and secondary education tends to focus on the lower levels (spelling, verb conjugation, grammar, sentence structure), whereas higher education pays very little attention to these levels, focusing instead on text structure and content. Until now, teachers in higher education have had little to gain from computer programs which focus on writing skills at the lower level.

The contribution of computer-aided instruction to the acquisition of writing skills in higher education is rather limited. The computer can take over informing and 'mechanical' tasks (Robertson, 1986; Dirkzwager & Mol, 1987; Glover et al., 1990). This does not mean that less is required of teachers, but

that their efforts must be redirected, giving alternative forms of teacher-student behavior a chance. There is no need to focus primarily on technical aspects; instead attention can be given to discussing content. The teacher evaluates the contents of the text with a view to the student's underlying line of reasoning. Teachers can consider whether the student's message has been conveyed and why a particular message has prompted the student to take a particular approach. In this way, they examine the writing process and the communicative goals of writing, an aspect which has fallen by the wayside until now due to lack of time. The technical side of the finished product can be checked by computer to a large extent.

Development of such programs continues, however. Researchers are involved in designing suitable programs. The focus is on integrated programs within the realm of artificial intelligence, with word-processing programs incorporating modules which, for example, assist the student in planning, adding summaries, checking options, and gaining access to database systems.

Researchers also agree that computer programs may relieve teachers giving them more time to devote to activities other than lower level writing. Computers can be used to teach individual students basic word-processing skills. There are programs to help students analyze the technical aspects of the writing assignment (Schwartz et al., 1992). Teachers who are used to offering tailored information to individual students, can be relieved of this task when computers are used to gather information via a database system. There are also programs which can trace mistakes in texts. The program marks each occurrence of a particular type of mistake in the text, i.e. sentence structure, punctuation, grammar, word choice, and spelling.

From an educational point of view, the findings and new developments mentioned above are significant and promising for the future of educational practice.

The most important factor influencing the level of writing skills of students in higher education is the amount of time spent writing during their previous school careers (Glover et al., 1990). Since research has shown that primary and secondary education devotes so little attention to communicative writing skills, we may conclude that once students enter higher education, they run a greater risk of being functionally illiterate, i.e. unable to communicate effectively in written form.

There should be a single, uninterrupted line of development in writing instruction extending from primary school right through to higher education. Writing skills are acquired in phases, by practising and receiving specific feedback on the results. By combining a teacher-oriented and an interactive approach (Rijlaarsdam, 1989), we can begin in primary school to provide instruction and practice in the effective components of writing, by clarifying those components that students are capable of handling at that time. This means being very sensitive to whether the necessary prior knowledge is present and the preceding levels of skill have been achieved. For the time being this seems like utopia.

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TABLE 1

Major Differences Between Experienced and Inexperienced Writers

Components of the Writing Model	Activities	Experienced Writers	Inexperienced Writers	Source
Task-environment	Puts a great deal of time into analyzing the assignment and clarifying the assignment goals.	+		Bryson et al. 1991 Glover et al. 1990
	Starts writing directly after the assignment is given.		+	Rijlaarsdam, 1989
Knowledge Environment	Either already knows a great deal about the subject or knows how to acquire this knowledge efficiently.	+		Rijlaarsdam, 1989 Glover et al. 1990
	Knowledge of the type of text required.	+		Van der Loo, 1993
	Has developed solution blueprints for the various types of assignment and makes use of these acquired procedures to tackle a new assignment.	+		Bryson et al. 1991
	Is able to size up readership accurately and select the information that readers will need.	+		Bereiter, 1980 Flower, 1979 Rijlaarsdam, 1989
	Simply writes down everything he/she knows about the subject.		+	Rijlaarsdam, 1989
	Searches memory for associated ideas targeting similar goals, in this way creating a hierarchical order.	+		Biggs, 1988 Bryson et al. 1991 Rijlaarsdam, 1989 Van Gelderen, 1991
	Only in a later phase does he/she try to recall details relating to the subject itself.	+		
	Reads and rereads source material actively.	+		Kennedy, 1985
	Scribbles comments in the margins, underlines passages in the text and takes notes related to the main idea of the text while reading.	+		Kennedy, 1985 Glover et al. 1990
	Makes frequent use of literal quotations.		+	Kennedy, 1985 Rijlaarsdam, 1989
	Uses his/her own words to turn the information given	+		

	in the sources into a cohesive whole.			
Intention	In-depth approach. Is intrinsically motivated to write.	+		Steinberg, 1980 Biggs, 1988 Flower, 1979
	Sees a writing assignment as an opportunity to integrate and deepen his/ her own knowledge.			Steinberg, 1980 Biggs, 1988 Flower, 1979
	Superficial approach. Writing is a compulsory assignment that he/she has to pass.		+	
Planning	Tendency to plan at the level of larger text units and the reader.	+		Applebee, 1984 Van der Geest, 1991 Bryson et al. 1991
	Develops an outline showing the general structure and content, which provides clarity on the degree of cohesiveness and completeness of the text he/she is to write.	+		Glover et al. 1990 Applebee, 1984 Sanders, 1991
	Problems with text structure, especially with discontinuity, ambiguity and incompleteness		+	Rijlaarsdam, 1989 Flower & Hayes, 1980 Van der Gein, 1991
	The outline is part of the thought process (a visual representation of the line of reasoning) and he/she uses it flexibly.	+		Flower & Hayes, 1980 Glover et al. 1990 Stotsky, 1990
	Is able to accept changes to his/her outline in later phases if necessary after the draft has been tested against the assignment goals.	+		Flower & Hayes, 1980 Glover et al. 1990 Stotsky, 1990
Translating	Falls back on speaking, or more precisely, conversational skills and the interactive structure underlying these skills.		+	Van der Gein, 1991
	The formulation of ideas into written text is partly automatic.	+		Rijlaarsdam, 1989 Bryson et al. 1991 Glover et al. 1990
	Concentrates much effort on the core of the argument.	+		
	Is constantly preoccupied with checking spelling and grammar, and has difficulty focusing on the content.		+	
	Occasionally rereads large	+		Bryson et al. 1991

Category	Description	Present		References
	sections of text, making text cohesion more likely.			Glover et al. 1990
	Frequently rereads small sections of text.		+	
Revising	Spends a great deal of time and energy revising text.	+		Applebee, 1984 Bryson et al. 1991 Biggs, 1988,
	If necessary, revises the text completely.	+		Van der Geest, 1991 Glover et al. 1990
	Revises large sections simultaneously, testing them against the assignment goals.	+		Rijlaarsdam, 1989
	Only after the content is satisfactory does he/she concentrate on spelling and grammar.	+		
Monitor	Knows how to focus on the processes and levels that are important at the time and ignore other things for the moment.	+		Bryson et al. 1991 Glover et al. 1990 Rijlaarsdam, 1991 Flower & Hayes, 19°0
	Is able to monitor his/her own writing process.	+		
	Reduces mental strain.	+		
	Is unable to monitor his/her own writing process.		+	
	Builds up metacognitive function which monitors subprocesses while acquiring writing skills.	+		

+ : means present

Figure Capture

Figure 1:   A Model of the Writing Process Adapted from Hayes and
             Flower, 1980.

Figure 1:   A Model of the Writing Process Adapted from Hayes and
             Flower, 1980.

Putting the student first? Reflections on tele-communication and electronic leading strings.

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1.
From the beginning, distance teaching universities (DTUs) have been concerned with the problem of how to provide for interaction and communication in a teaching system which by its very definition precluded nearness and informal contacts. Depending on the philosophy behind a DTU, taking measures to overcome the distance between the institution and its students could be seen as a necessary institutional requirement or, conversely, an unwarranted interference alien to the concept of distance education. The German FernUniversität as its name 'Distance University' suggests has traditionally placed more emphasis on maintaining its distance teaching character and less emphasis on bridging the gap to its students. It aims to provide self-instructing learning materials and requires a minimum of face-to-face attendance or personal contact between students and academic staff. There is a network of study centres which offer some local support services, especially to students in introductory courses, but due to the decentralised educational system in the Federal Republic these are not evenly distributed throughout the country. Rather, the majority of these study centres are situated in the State of North Rhine-Westphalia which means that out-of-state students in more than half the student population have little or no access to local support services. The FernUniversität's ideal-type distance student has been the so-called independent or autonomous learner who neither wishes for nor needs institutional support or feedback beyond what is provided in the study material and marking of assignments and exams or thesis supervision. The very fact of students registering as distance students is frequently interpreted as a wish on their part to pursue their university studies in isolation and not to have time-consuming or inconvenient attendance requirements.

2.
During the past ten years much of our evaluation research has shown that contrary to this expectation of self-sufficiency many distance students do wish for more opportunities to communicate or meet with other students and with teachers. A recent survey on communication preferences and practice of FernUniversität students has again demonstrated the high value both men and women students place on seminars and face-to-face interaction with their teachers as well as on other modes of communication. Nearly all students state a personal preference for meeting FeU staff and students in person, seven out of ten German distance students like seminars or study groups and would welcome more opportunities to participate in such activities. These recent findings are further consistent with previous data in showing that women value personal interaction more than men do and that this serves additional or different functions for them. In seminars, tutorials, and study groups women distance students look for support and connectedness as well as for an interchange related to the study material and course content. Women tend to judge the effectiveness and quality of face-to-face communication by higher or different standards than men do. Since they have less access to resources and more domestic and childcare responsibilities, women often face more difficulties and overcome higher hurdles in order to make attendance in study groups or tutorials possible. Nevertheless, women are more likely to attend the different kinds of face-to-face events such as tutorials and one-day or week-end seminars. Their participation in student-organised groups is significantly higher than that of the male students. In actual fact, just

under two thirds of the students in our sample have had at least one meeting with FernUniversitat personnel in connection with their studies, nearly all have some experience with face-to-face interaction such as tutorials, seminars, study groups, or sessions providing general information about the FernUniversität and aspects of its teaching system. This must be considered a high percentage in a distance education system which has a student population as large and as geographically wide-spread as is the case in Germany. In addition, the majority of men and women studying at the FernUniversität are in full-time or part-time employment and many have family commitments which further restricts their ability to participate in seminars, workshops or summer schools or to travel to tutorials and study group meetings.

3.
In spite of the continued interest FeU students show in personal, face-to-face communication, it is the telephone and related technologies which have become the dominant means of contact between the FernUniversität and its students.

Our research shows that talking on the phone is the second most popular means of communication for distance students, 85% of the respondents stating a personal preference for using the telephone. On the practical side it is obviously easier to get in touch by phone than it is to meet other students and staff in person. Distance education students, who have little or no direct access to academic staff, are therefore very likely to use the telephone to get in touch when contact is necessary. Written correspondence, which was once the predominant mode of communication at the FernUniversität, is steadily losing ground: Nine out of ten students have telephoned the university at least once in the course of their studies, as compared to 66% who have written at least one letter.

The answering machine and especially the fax machine have introduced a new quality into the expectations of students with respect to telephone-based communication. They expect more or less instant feedback and answers or solutions to whatever problem they are putting to the course supervisor or other staff member. Once the fax has been sent, or the message spoken onto the machine, there is no excuse for the recipient not to react to it immediately she or he can be reasonably expected to be in the office. For the academic staff this raises questions of manageable work-loads and control over their own schedules as increasing numbers of students avail themselves of these inexpensive and easy-to-use communication channels. With the wide-spread introduction of fibre-glass cable and ISDN the transition from telephone-based communication to computer-mediated communication becomes fluid. Fax-cards and other communication modules are built into personal computers; data, including graphs and handwriting, can be transmitted; two-way communication becomes possible between any number of work stations or participants; and e-mail and computer conferences are open to anyone at relatively low cost.

This affects distance education which offers itself as an eminently suitable field for the application of communication technologies. In fact, there seems to be an increasing tendency to equate communication in distance education with technically mediated and electronic contacts and interaction between the teaching institution and the centre and the students at the distance.

The FernUniversität, in common with all other German universities, faces a situation of increasing fiscal restraints and cut-backs of resources and staff while, unlike other universities, enrolment at the FernUniversität continues to increase reaching a high of 56,000 students in the current academic year (1994/95). At the same time there is more political pressure on the

university to be successful. Government funding is now tied to the success achieved by the university, and success in teaching is mainly defined in terms of the ratio between total student numbers and degrees, or between course enrolments and end-of-course exams passed. One of the ways which is thought to raise the FernUniversität's success rate is improved communication or, more specifically, tele-communication between the students and the university.

There are thus two converging developments pushing the FernUniversität in the same direction: External pressures demand more extensive communication and technological innovations open up new and more extensive lines of communication. The need to bridge the gap is met by the availability of means to overcome distances: Provided with the necessary equipment, any student, however distant and otherwise inaccessible her or his location, can be in touch at any time with any staff member or any other student similarly equipped. Study problems can be addressed individually, or help can be given to unlimited numbers of students simultaneously. Tele-tutorials and exam-preparation can focus on areas which present particular difficulties to students. Computer-conferences, on-line question-and-answer sessions, data bases and library catalogues are instantly accessible. Surely, a student offered these facilities and more ought to be able to complete her or his degree course on schedule.

4.
An added bonus of tele-communication could be seen to occur with respect to the above-mentioned ideal-typical independent learner. This person is provided with the study material and with the most up-to-date information on all aspects of the courses and study organisation. S/he is not burdened with extraneous information and knowledge but has access to all additional and supplementary material as required. With the help of tele-communication, are we not getting closer to this ideal autonomous person with her or his self-directed study progress? I contend that there is room for doubt.

As was shown for the fax and answering machines, there is a tendency for the quality of communication to change with technological progress. There is no reason to think this does not extend to computer-mediated and electronic communication. We can picture the following scenario:
A student is working on the study material and hits a snag. Her or his aim is to get through the material as quickly as possible and not lose time over difficult concepts or mathematical formulas or additional literature. S/he dashes off a query to the course supervisor or inserts one into the computer conference in the expectation of getting a prompt answer. This will save time and help the student to finish the course work in good time and well prepared for the end-of-term exam. This, in turn, will improve the success ratio by which the quality of the university's teaching is measured. It can also help to refute any accusations that distance education cannot really provide the same quality education as does a university teaching in the conventional mode, where students are in regular touch with their teachers and their fellow students. The industrialised character of large-scale distance education is transformed as the process of studying becomes individualised. So what could possibly be wrong with this brave new worldì of distance education?

I wish to put forward the following points, which are more or less related to each, other to illustrate some of the issues which need to be explored further with respect to tele-communication and distance education:

There seems to be a certain technological euphoria which assumes that all serious students are going to be eager to communicate through electronic channels if only they were available. This is not supported by findings from our research. Rather, many students do not have the equipment and are sceptical as to its value for their own studies. Apart from personal study habits and preferences, distance students weigh the expected expenditure of money (for purchase and on-line cost) and time (for learning to use the equipment and software and for using it) against the expected return. At this time, students often feel that investing in tele-communication is not worth their while.

Technology is often introduced at the same time as budgets and staff are cut back. This may be a coincidence with two unconnected phenomena, rapid technological advances and economic difficulties, happening at the same time. Still, it cannot be ignored that more and better equipment is often installed without additional and qualified staff to operate it or without providing existing staff with the necessary training and time. Rather, both hardware and software tend to be installed with a view to replacing personnel. This happens, for instance, when academic staff are provided with a Personal Computer for purposes of research and teaching and end up doing their own typing, data processing etc. which previously was assigned to specialists and support staff. The time spent on learning and using the technology is subtracted from time previously spent on developing teaching materials, grading papers and exams, and other forms of teaching activities.

Both distance students and staff tend to view tele-communication as a source of additional information and as a hot-line, and they use it accordingly. There is little room for another, very important function communication should have in an academic setting and as part of a university education: the academic discourse, with its ramifications and digressions, not aimed at providing a specific piece of information but at developing a critical understanding of the discipline, or even developing the discipline.

If tele-communication were to be used by students predominantly in the way sketched above, i.e. as a source of information and as a hot-line in case of difficulties, the whole character of the institution as a university might be affected. Starting with the simile of distance education as an industrialised form of teaching, it might be said that technology and tele-communication introduce principles of lean production into tertiary education: Knowledge on demand, supplied by the university if and when the student calls for it, and not necessarily developing into a coherent and balanced picture of a discipline. That this might be part of a general re-orientation of the character of university education is indicated by recent initiatives to change degree programmes from given curricula to modules with each student making up her or his own curriculum.

It is debatable to what extent tele-communication contributes to the self-reliance and independence which distance students are meant to develop during the course of their studies. There are indications that the reverse can happen: Depending on the kind of interaction, students may be held in a state of dependency on the institution, relying on their technological umbilical cord to provide information and answers to any and all problems they cannot immediately understand or solve by themselves and to give immediate feedback. These students may be considered independent learners in the sense that they take the initiative to request information and clarification, and that their use of modern communication technology serves as a means to optimise their learning process and to acquire knowledge necessary for gaining their degree. Yet they may not be autonomous learners in the sense that they develop

a critical understanding of their subject area and an ability to work out problems and discover solutions on their own.

5.
The issue in question does not seem to be the availability of communication technology. Rather, the issue seems to be our understanding of the character and goals of an academic education in general, and of distance education in particular. What role can and should tele-communication play in tertiary distance education today and in the future? Should it replace or supplement other media and, especially, face-to-face interaction? How do we assure that promoting electronic communication will improve the teaching and learning situation rather than placing additional burdens on students and staff? To what extent can tele-communication in a mass university be a substitute for dialogue and discussion rather than simply transmitting information?

Tele-communication is here to stay, and it does facilitate contacts between people who are separated by space or time, allowing us to exchange information, to co-author papers, or to tap into data banks world-wide. In the case of distance students, it allows them to get in touch with their course supervisors and tutors and with other students regardless of geographic accessibility. The use of (multi-) media and tele-communication in distance education makes it possible to supply students with the most up-to-date information about developments in their chosen field. It also tempts us to assign a remedial function to communication technology which is expected to overcome the perceived deficits of distance education in the area of personal communication, attempting to simulate traditional university teaching situations. The question is how to strike the balance between offering opportunities for electronic communication and creating a habit of dependency on the institution and its possible supply of processed knowledge and instant information.

The seemingly limitless possibilities of technological development further tempt us into thinking that all communication needs of distance students could in some way be met through the creation of a virtual campus. In distance education, where students are usually isolated and pressed for time, there exist limited opportunities for meeting in person and for participation in face-to-face sessions or study groups. Helping distance students to meet with each other through the means of communication technology, for instance by setting up and supporting computer conferences, would go some way toward meeting the communication needs of many distance students.

Finally, it must be noted that many students of the FernUniversität are interested in tele-communication, although their expectations as to the possible functions and benefits are quite varied. Yet there still remains a residue of communication needs which resist digitalisation and electronic processing. As one distance student puts it: " Studying at a distance already is very impersonal and anonymous. I therefore feel very scpetical about attempts to rely increasingly on electronic communication as the only means of commmunication between the FernUniversitat and its students. I, for one, would prefer to talk with a human being rather than a computer screen."

Comments from students in questionnaires and interviews as well as in seminars and other face-to-face meetings indicate that the students associate tele-communication with supplementary material, problem-solving, exam preparation, and other course-related information. While they associate face-to-face seminars etc. with similar functions, they perceive an added quality in these, namely meeting other students and teachers in person and

having a chance to give or listen to a presentation, to argue theories, and to work in a group. Distance students face a dilemma: Most of them are not full-time students and are limited in the amount of time they can invest in their studies. Since degree courses taken at a distance involve a long time span, students are keen to avoid prolonging their studies. Tele-communication is seen as a way of speeding the learning process, and many students are not only prepared to use communication technology but are enthusiastic about its possibilities. Only few of them want this to be the only means of communication.