

International Education Journal



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Volume 5, Number 3, September 2004



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Monitoring the Learning and Teaching of Science in a Changing World

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This article addresses the issues involved in monitoring the teaching and learning of science in a changing world. It examines the development of cross-cultural studies of educational achievement, particularly in the field of science, including the theoretical basis of the studies and the models advanced and used in evaluation and more recently in the monitoring of change over time. In addition ten specific issues are identified for investigation into the critical problems facing learning and teaching of science across the world at the beginning of the twenty-first century with particular reference to the PISA studies being conducted by the Organisation for Economic Cooperation and Development.

Science teaching, science learning, cross-national studies of educational achievement, monitoring of educational achievement, models of science learning and teaching

INTRODUCTION

The six decades since the cessation of hostilities in World War II have been accompanied by remarkable changes in the teaching of science in most countries of the world. The developments that occurred prior to and during the years of war, with respect to the electronic computer, the atomic bomb, and telecommunications, together with the discovery of the double helix shortly after the war, and the writings of Conant (1947) *'On Understanding Science'* and Popper (1959) *'The Logic of Scientific Discovery'* led to a major reform in science education in the late 1950s and early 1960s that spread across the world. Not only was logical positivism largely rejected and biology and earth science introduced into the school curriculum, but the teaching of physics and chemistry were also substantially changed together with the introduction of science into the primary school curriculum, as well as the teaching of science as a compulsory subject at the lower and middle secondary school levels. At the upper secondary school level, policies of raising the school leaving age and staying on at school beyond the upper age of compulsory schooling led to a marked rise in the popularity of biology, particularly among girls. In addition, ideas associated with the relations between science, technology and society and the history of scientific thought were introduced into the science curriculum, sometimes as minor subjects, and more frequently intertwined within the teaching of specific topics.

However, developments in the field of computer science and the emergence of information and communications technology that became divorced from the main fields of science in the school curriculum have served to draw students away from the subjects of physics and chemistry at both the upper secondary and higher education levels. As a consequence, in most countries of the world there is today a desperate shortage of younger teachers of physics and chemistry to replace an aging teacher work force. Moreover, the teaching of science as a core subject in most countries of

the world throughout the primary school years and up to the age of 15 years or the end of compulsory schooling is, during the first decade of the twenty-first century, struggling to capture the interest and imagination of students, particularly in the fields of physics and chemistry.

At the same time as the science curricula were being reformed in the mid-1960s, educational research emerged as a new and vigorous field of inquiry, making use of new technology and the power of electronic computers to conduct cross-national surveys of educational achievement in the subject areas of mathematics in 1964, and in science in 1970-71. These studies have been followed intermittently by repeat surveys to monitor change in the teaching of these subjects across the years of schooling. The international and comparative nature of these survey studies have revealed a surprising uniformity in the teaching of these two subjects, initially across the Western world and more recently in the Asia Pacific, Eastern Europe, Latin America and Middle East regions. The teaching of these subjects in schools would seem to have developed initially from Germany and Great Britain, and subsequently from the United States, France and Russia to influence the curricular content of these subjects across the world. While there are some variations in the structure of curricula, there is little variation in the content being taught, except in Mathematics in Francophone countries, in Physical Geography and Earth Science in Eastern European countries, and in Behavioural Science in countries linked to Russia. Since many of the surveys undertaken have sought to analyse curricular differences, rather than to emphasise comparisons with respect to levels of achievement, the studies have probably served to unify the teaching of these subjects around the world, rather than to increase diversity.

These cross-national studies were initiated in the late 1950s by a group of prominent educational research workers who met in England and at the UNESCO Institute of Education in Hamburg to discuss common problems in the conduct of educational research. From their deliberations they recognised the need for a comparative research program that was empirically oriented and that investigated problems that were common to many national systems of education. They saw the world of education as a natural laboratory in which different countries were experimenting with different strategies of teaching and learning. By examining the naturally occurring differences between countries in both the conditions of learning and educational outcomes, they argued that it might be possible to identify significant factors that influenced the outcomes of education. Consequently, they formed an organisation in 1961 known as the International Association for the Evaluation of Educational Achievement, now commonly referred to as IEA, to develop a program of research that would be both comparative and cooperative in order to pursue their objectives. The teams of scholars who guided the development of the IEA research studies worked under the guidance of Torsten Husén and Neville Postlethwaite, who were able to attract contributions from leading scholars from Europe and the United States initially under the auspices of the UNESCO Institute for Education in Hamburg, Germany, and subsequently the Institute of International Education at the University of Stockholm in Sweden, and currently, an administrative centre at The Hague in The Netherlands. Thus, the PISA 2006 testing program draws on a body of educational research particularly in the areas of mathematics and science that has been carried out cross-nationally for almost 40 years. While the PISA 2006 program is focused primarily on science at the 15-year-old or middle secondary school levels, rather than the 14-year-old and terminal secondary school stages, that were investigated by IEA it relates to the final year of compulsory schooling in many of the countries involved and thus provides information with respect to a cohort of students, that is not affected significantly by dropping out from school. Where formerly the 14-year-old age level served a similar purpose, the 15-year-old level is, in 2006, more appropriate. However, present day studies draw extensively on the thinking carried out during earlier investigations.

THE THEORETICAL BASIS OF EARLIER STUDIES

In the field of science education earlier studies were reported by Comber and Keeves (1973), Keeves (1992a and b), Postlethwaite and Wiley (1992), and Rosier and Keeves (1991) and in mathematics by Husén (1967), Robitaille and Garden (1989) and Rosier (1980). These publications in the main do not provide accounts of the lengthy discussions that underpinned the design and development of the investigations that were undertaken. However, leading scholars from Europe and the United States in the fields of education and the social and behavioural sciences contributed to these discussions with working papers, that are now stored in archives in California in the United States. All that can be done in this article is to summarise some of the key ideas that influenced the planning of these early investigations.

No grand theory was advanced to provide a framework for the systematic study of education on a world basis, although Holmes (1981) had sought to provide one. Nevertheless, investigations that have been undertaken for the evaluation of educational achievement would seem to have had their origins in the work directed by Tyler for the Eight-Year Study (Aikin, 1942). These ideas were elaborated initially by Tyler (1949), and subsequently by Bloom et al. (1956), Bloom, Krathwohl and Masia (1964), Bloom, Hastings and Madaus (1971) and revisited by Tyler (1986) in a largely American context. While Bloom was deeply involved in the founding of the IEA movement, the IEA studies were developed through the involvement of scholars from all parts of the world, and these American based publications do not adequately represent the richness of the views of those who shaped these investigations.

The outcome of these scholarly discussions has led to the formulation of a series of models that have been employed in the cross-national studies conducted by IEA with respect to the following problem situations: (a) curriculum implementation, (b) time and school learning, (c) causal models of school learning, (d) cross-national models of educational achievement in a national economy, (e) an input-output-utilisation model, (f) a retentivity model for school learning beyond the years of compulsory schooling, and (g) an educational environment model for the investigation of the influence of the environments of the home, the classroom and the peer group on educational achievement. Each of these models is described briefly in the section that follows.

MODELS FOR THE EVALUATION OF EDUCATIONAL ACHIEVEMENT

It is important to note that the models under consideration were, in the main, developed within the International Association for the Evaluation of Educational Achievement (IEA) by teams of scholars, rather than particular individuals.

Curriculum Implementation Theory

From the Gränna Workshop conducted by IEA in Sweden in 1971, which examined in detail the seminal work '*The Handbook of Formative and Summative Evaluation of Student Learning*' by Bloom, Hastings and Madaus (1971), came the model (see Figure 1) of curriculum implementation that has been tested, in part, in reporting the results of the First and Second IEA Science Studies and the Second IEA Mathematics Study (Keeves, 1974; Keeves, 1992a; Postlethwaite and Wiley, 1992; Robitaille and Garden, 1989; and Rosier and Keeves, 1991).

The curriculum can be considered to exist at three levels: (a) the intended curriculum, (b) the implemented curriculum, and (c) the achieved curriculum, which are influenced by the antecedent and the contextual factors operating at the systemic, classroom and student levels respectively. The **intended curriculum** is usually specified by political bodies and authorities in charge of an education system. However, in some systems the responsibility to specify what is taught resides with the board of an individual school, or with each individual teacher within a school. The **implemented curriculum** is the second level in the curriculum sequence. It is the task of each

individual teacher to interpret the intended curriculum by translating it into a set of specific learning experiences that are considered appropriate for the particular group of students in a class. The **achieved curriculum** is the third stage. It refers to the extent to which individual students have learnt from the experiences that were planned and organised for them. Figure 1 shows that the intended curriculum is set in the context of the education system; the implemented curriculum is located in the context of the school or classroom; and the achieved curriculum relates to the individual student.

An important aspect of the implemented curriculum involves the opportunity that the students under survey had to learn specific content topics from the larger pool of knowledge that is considered both necessary and desirable knowledge for teaching to particular age and grade groups. Three aspects of curriculum validity were identified by Rosier and Keeves (1991), namely:

- (a) to what extent does a particular intended curriculum match the more general curriculum formed by the body of content that might be taught;
- (b) to what extent do the test items cover the intended curriculum; and
- (c) to what extent do the test items relate to what is taught in the intended curriculum.

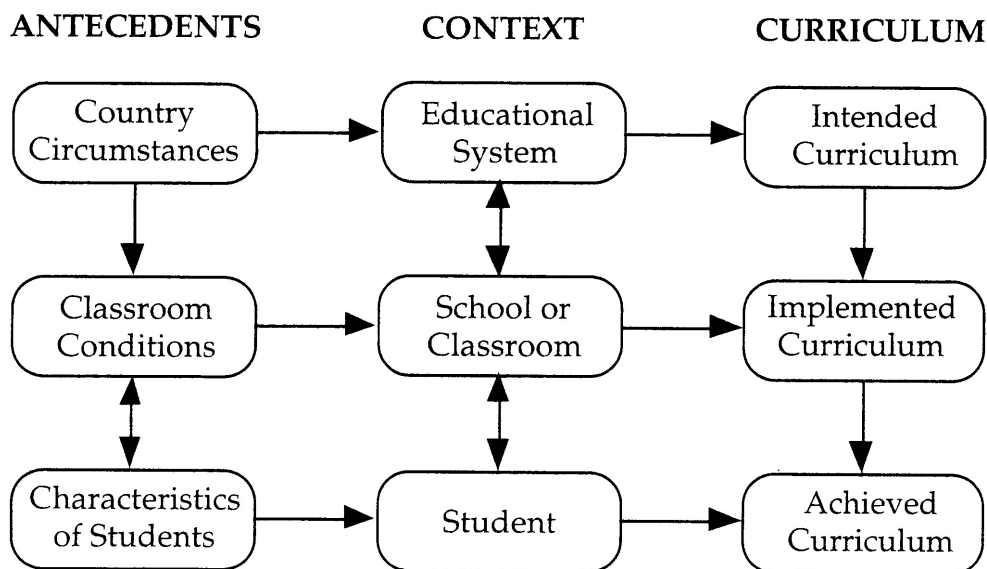


Figure 1. The context and components of the school curriculum

It is clear that the implemented curriculum is dependent on the intended curriculum, and the achieved curriculum upon the curriculum that is implemented in the classroom.

Carroll's Model of School Learning

The model of school learning advanced by Carroll (1963) has been the source of many theoretical discussions of the factors influencing educational achievement. The IEA studies provided opportunities for the investigation of this theory and for the derived models to be tested empirically (Carroll, 1975). Carroll developed this model in order to investigate the prediction of success on complex learning tasks. Three variables were specified in terms of time: (a) **aptitude** that involved the amount of time a student would require to learn a task to a specified criterion, given motivation, opportunity to learn and optimal quality of instruction; (b) **perseverance** that involved the amount of time which a student was willing to engage in active learning; (c) **opportunity to learn** that involved the amount of time provided for learning in a specific program. In addition there were two further variables that were not specified in terms of time; (d)

ability to understand instruction that was dependent on the quality of instruction provided; and (e) **quality of instruction** that involved the structuring of the learning task, the effectiveness of presentation and the skills of the instructor. These two additional variables interacted with each other and with the three variables directly involving time. Bloom (1974) drew attention to the relevance of IEA findings on **time** for the study of school learning and gradually the significance of time as a key concept in learning has come to be accepted.

A Causal Model of School Learning

In the planning of the Second IEA Science Study a causal model derived from Carroll’s model of school learning was advanced in 1981 which was subsequently tested in the analyses of the data collected in that study at the 10-year-old, 14-year-old and terminal secondary school levels (Keeves 1992a). This causal model has also been examined in detail in several doctoral theses. The model of performance in science is shown in Figure 2 and its dependence on Carroll’s ideas is immediately evident. An important aspect of this model is the identification of the levels of operation and analysis of the variables included. Such a model not only guides the selection of information collected and the variables constructed, but also guides the analysis of data.

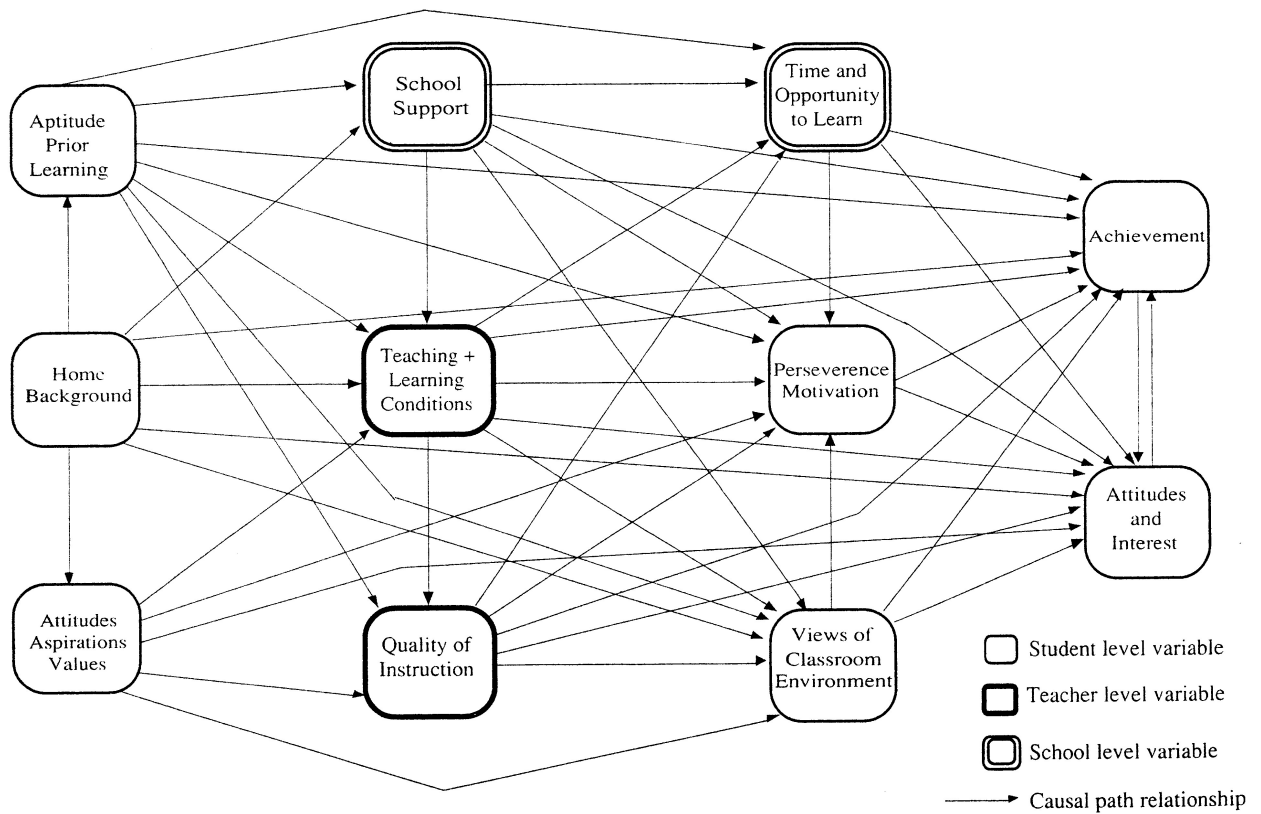


Figure 2. A model of student performance

A Cross-national Model of Educational Achievement in a National Economy

In 1967, during the planning phase for the IEA Six Subject Study, a conference was held at Lake Mohonk in the United States, which sought to develop a ‘cross-national model of educational achievement in a national economy’. A paper by Dahlöf (1967) developed a scheme for the **educational process** that applied in cross-national settings, that is shown diagrammatically in Figure 3.

Of particular interest for policy making in education are the frame variables. However, they depend on (a) the environment and economy, (b) demand for manpower, (c) curriculum content, and (d) the objectives of education.

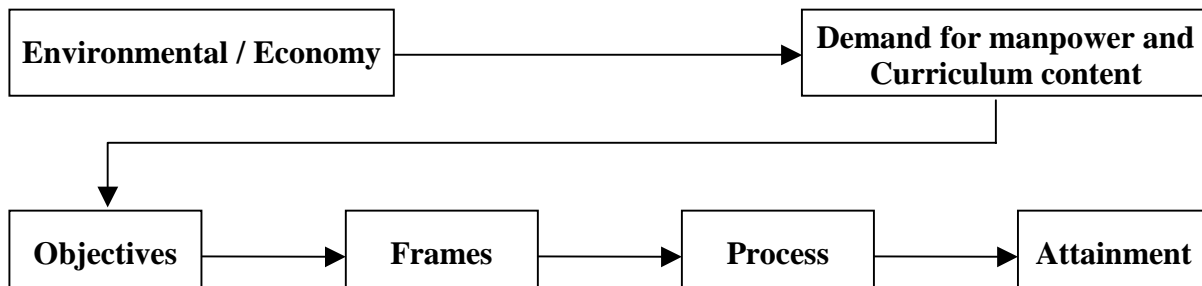


Figure 3. A cross-national model of educational achievement in a national economy

Input-Output-Utilisation Model of Education

The Lake Mohonk Conference also advanced an Input-Output-Utilisation model of education which is presented in Figure 4 (Super, 1967) that included many significant components, namely: (a) financial (b) production conditions, (c) structure and operations (educational structure, equipment, agents, curriculum, and instructional methods), (d) outputs (knowledge, skills, attitudes, participation, attainment level), and (e) utilisation (employment, community involvement, and family activity). While causal influences, student movement and financial flow were taken into consideration, insufficient thought was given at that stage to the testing of such a complex model. The task remains for more specific hypotheses and multilevel causal models to be advanced that are amenable to testing, and build on the ideas advanced by Super (1967). The model shown in Figure 4 extends Super's original model through the addition of (f) social and cultural capital and (g) key aspects of national development, including human development.

Retentivity Model for School Learning

The basic idea on which this model is built is that in each country there is the same underlying distribution of intellectual ability in the complete age cohort and that differences in mean scores and variances in any cross-national test at a stage beyond the age of compulsory schooling arise as a result of the selection procedures that operate within the country. This may seem a gross oversimplification of a complex situation, and if the model does not fit the data then the model must be rejected. However, in situations where this model has been tested it would seem to provide an adequate account of the situation.

The simple assumptions involved are:

- (a) the scores in each country would be normally distributed over the whole age group, if all persons in the age group had taken the tests;
- (b) these hypothetical distributions are the same for all countries; and
- (c) the populations under survey in each country involve the most able persons in the age group in each country.

Using these assumptions the expected mean scores and variances can be calculated for the groups forming the selected proportions of the age group for each country which can be compared with the observed mean scores and variances (Walker, in Husén, 1967, pp.135-139).

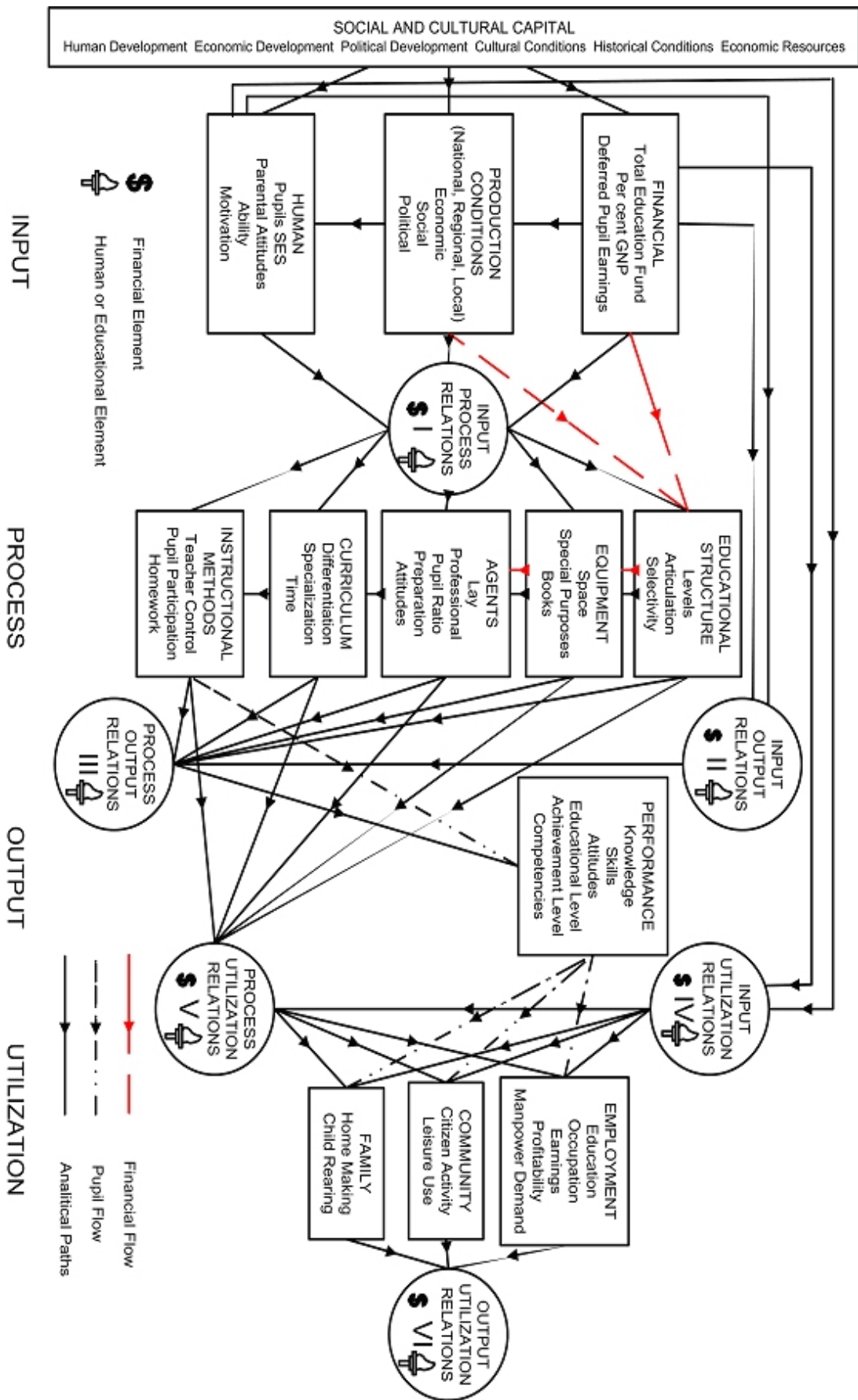


Figure 4. A functional process organic model of education based on Super (1967)

The model employed for the estimation of the mathematical achievement test scores and their variance when a proportion of the total age group participates in the study is shown diagrammatically in Figure 5, from which the formulae given below are derived.

$$Mean = \frac{y}{q}$$

$$variance = \frac{1 - y}{q \left\{ \left(\frac{y}{q} \right) - k \right\}}$$

Where q = proportion selected,
 y = ordinate of normal curve at point of cut-off,
 k = point of cut off.

If there is a correlation between the variable operating in selection from the population and the achievement test score under survey, then the above formulae for the mean and variance are:

$$Mean = \frac{ry}{q}$$

$$variance = r^2 \left(\frac{y}{q} \right) \left\{ \left(\frac{y}{q} \right) - k \right\}$$

Where r is the correlation.

Figure 5A shows the normal distribution for mathematics scores with a cutting score k to select proportion q of the age cohort, assuming that those students selected would obtain the highest scores. Since this is not likely to be the case in a real situation the model is modified, as is shown in Figure 5B with a correlation r between the variable operating to select from the population, that is assumed to be normally distributed, and the mathematics scores obtained.

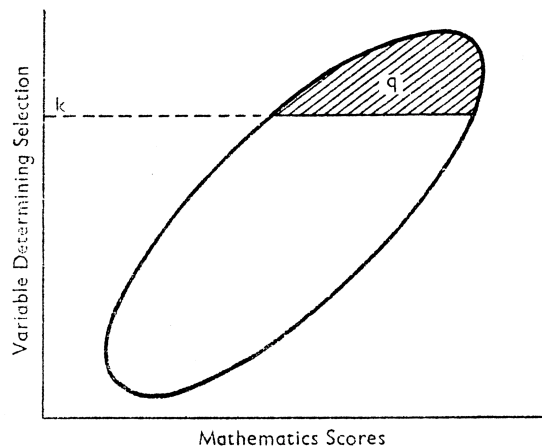
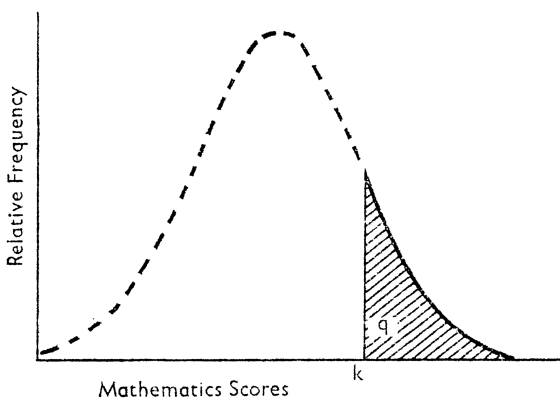


Figure 5A. Hypothetical distribution of achievement test scores for age cohort with cutting score k to select proportion q of the cohort

Figure 5B. The correlation surface relating achievement test scores to the selection variable, with cutting score k forming proportion q of the cohort

Educational Environment Model for Educational Achievement

A model was also developed from unpublished working papers that were discussed at the Lake Mohonk Conference and from discussions with Bloom in the Department of Education at the University of Chicago. This model was advanced for investigating the factors that influenced the change in performance of classroom groups of students over time. It was hypothesised that the environments of the home, the classroom and the peer group operated to influence the rate of change in achievement over time. Moreover, it was argued that these environments were best characterised by structural, attitudinal and process dimensions that could be specified in each educational setting within a society. The interrelations between the three environmental influences for each of the three dimensions could then be estimated from a recursive path model in which prior achievement was permitted to influence certain aspects of the home environment, which in turn was permitted to influence the classroom and the peer group environments. The model is shown in Figure 6 (Keeves, 1972, pp. 38-40).

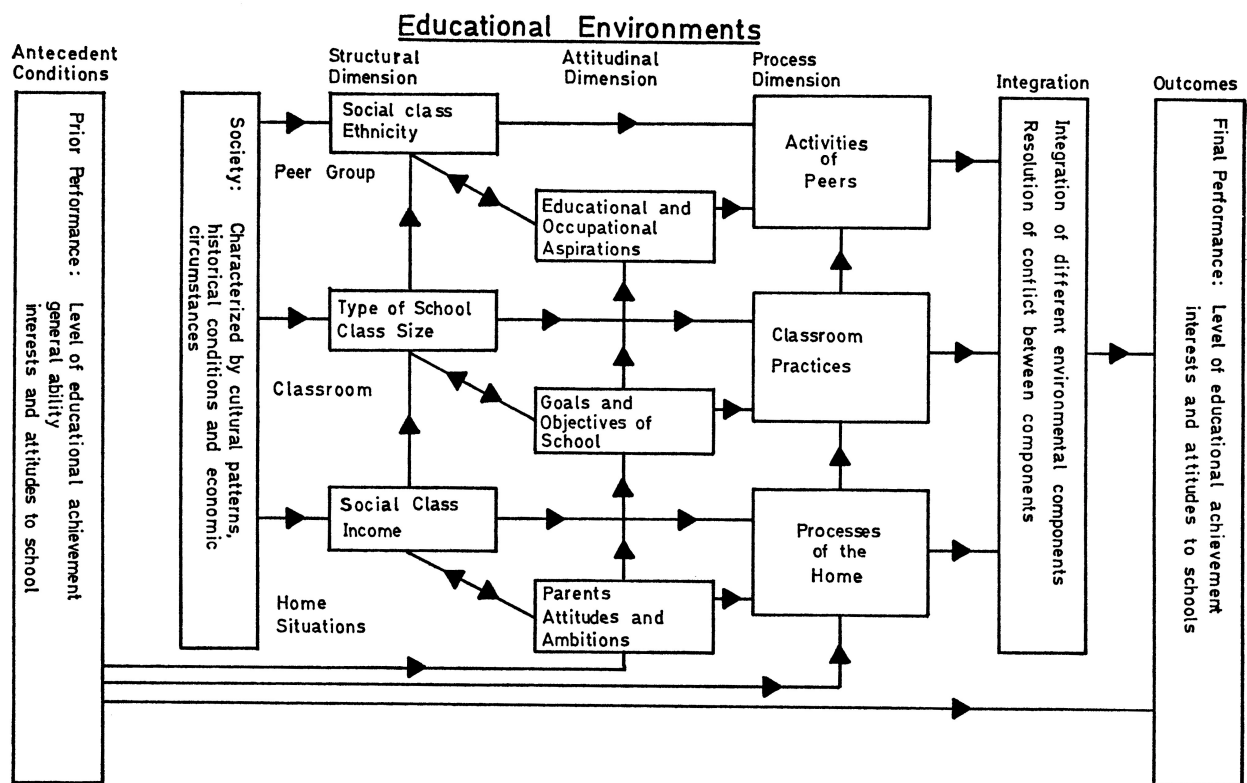


Figure 6. Model for the Study of Educational Environments.

OVERVIEW OF MODELS

The increased elegance of the methods of analysis that can be used in future studies that provide for both continuous and categorical data and the estimation of path models at two levels permit the testing of models involving both student and classroom data. Moreover, the advances made in the field of multilevel modelling for the estimation of cross-level interactions associated with three level models permit the analysis of data at the student, school and country levels, with provision for country-school interactions, or country-student interactions, or school-student interactions. In addition, with knowledge of cross-level interactions that might be expected, it is now possible to estimate models that provide for more than three levels, namely student, class, school and country levels, as well as estimating cross-level country specific effects.

Simplistic analyses that merely involve the estimation of bivariate effects at a single level are commonly highly suspect when the real situation is considerably more complex. Furthermore, studies that fail to control for spurious effects or report simple relationships with aggregated data are also very misleading, when such effects are mediated through other variables, or where aggregation bias has severely distorted the nature and magnitude of an effect. Consequently the models advanced in the past must today be reconstructed with consideration given to the analytical procedures that are being employed in the estimation of the parameters of a model and the testing of a model for fit to observed data and thus the adequacy of the model. Moreover, it should be noted that the computer programs that can be employed are progressively being developed to remove restrictions being imposed on the models being tested. Thus it would be inappropriate at the present time to specify the computer programs that could be used in any particular situation because the emergence of a new version of a program could change completely the comments that might be made.

Nevertheless, the models presented in the paragraphs above are essentially cross-sectional models and need to be developed and extended to examine effects when data that are longitudinal at the country, school or student levels over more than two occasions are under examination. Consequently, in a series of survey studies that involves monitoring at regular intervals over time, new models must be developed that permit not only the investigation of change in the criterion measures, but also in the effects of rates of change in the predictor variables. Fortunately, this is a field of data analysis that is under development at the present time, and new and powerful computer programs are being produced. The opportunity to monitor change over time and to investigate the factors influencing change give rise to exciting developments in the field.

TEN ISSUES FOR INVESTIGATION

In this paper I have deliberately chosen to identify ten issues for investigation, that I see to involve critical problems which are currently largely ignored in much of what I read and hear in the fields of science education that are influenced by current educational perspectives in the Western world of Europe and the United States. Moreover, in discussing these ten issues I have chosen to list them in a decreasing order of relevance and perceived importance, although I recognise that those issues lower on the list are dependent on issues or themes higher on the list. Furthermore, I see opportunities for reorienting the nature of the problems investigated when data from monitoring and longitudinal studies become available.

Issue 1: Mathematics and Science Achievement and the Labour Market

Elaboration. Scholars in the countries of East Asia are to some degree very puzzled by the results that have been produced by the series of studies undertaken by IEA over the past 40 years and more recently by PISA that provide consistent evidence of the superior average level of performance by students in a group of countries in East Asia in comparison with the countries of Europe and North America in the fields of mathematics and science (see, Spearitt, 2003). Hanushek and Kimko (2000) have addressed the issue of whether mathematical and scientific knowledge and skills are a major component of the human capital that is relevant to the quality of the labour force of a country. They have used performance in cross-national testing programs of mathematics and science achievement as an indicator of quality of human capital and have estimated its relationship to measures of economic performance. Labour force quality differences measured in this way have been shown to have strong relationships with growth rates in national economies. These effects were particularly strong for the countries of the Asia-Pacific region (Tuijnman, 2003, pp. 1088-9). This contrast between the East and West countries is possibly grounded in the differences between the approaches of science educators to reform the science and technology curricula as portrayed in an article in the *International Handbook of Educational*

Research in the Asia Pacific Region by Kok-Aun Toh and Ngoh-Kehang Goh (2003, pp. 1243-1256). Alternatively, it may be related to differences in approaches to learning between countries in the East and the West (Watkins, 2003, pp. 449-453).

Implementation. At least three aspects of this issue can be addressed by the undertaking of analyses of PISA data. First, there is the possibility of replicating the work of Hamushek and Kimko (2000) with data collected from IEA studies. Second, there would appear to be the need to obtain information from the developers of curricula with respect to curriculum reform in the fields of mathematics, science and technology, and the role of constructivist thinking in curriculum design in contrast to modelling approaches that serve to accelerate the cognitive development of students and sustain an interest in mathematics, science, and technology as proposed by Shayer and Adey (1981, 2002). The third aspect would involve an examination of the expectations for post-school employment and training of the samples of students in each country that are related to science and technology based skills, since these are the fields in many countries where there is a significant shortage of scientifically and technologically skilled personnel. A further aspect would require the development of a measure of generalised skill to indicate the competence of the students to use the Mathematics and Scientific knowledge in work and societal situations and to relate this measure to rates of growth in productivity.

Issue 2: Science and Technology Curricula in Schools

Elaboration. The introduction of information and communications technology into schools during the past two decades has been largely divorced from the teaching of science and mathematics, in so far as science and mathematics teachers have been reluctant to be concerned with issues that involve the application of their disciplinary knowledge to technological problems. As a consequence, the focus of technology teaching has been solely on ICT, and often merely on the development of word processing skills, the use of spread-sheets and the internet, without recognition of the many ways in which electronic computers are transforming the conduct of mathematical and scientific inquiry or the ways in which computer based technology is being applied in industry and commerce. The time has come for mathematics, science and technology teachers to reform their curricula in order to integrate the use of technology not only into the processes of teaching and learning, but also into the processes of doing mathematics and science, with recognition that the dynamic power of computerised technology is capable of changing the modes of thinking and learning by students in schools, in working life and in lifelong learning and personal development.

Implementation. A case must be argued most strongly for the introduction of a theme that is concerned not with the use of ICT in the science classroom, but with the use of technology in the fields of mathematics, and science and its uses in the home, the learning environment and the workplace in its many different forms. This leads to the consideration of such uses as (a) individualising instruction, (b) diagnostic testing with immediate feedback and informed correctives, (c) reflective thinking in learning with different modes of immediate verification, (d) the use of experimental design that involves the testing of models and hypotheses by simulation, (e) inductive thinking through control of the experiences provided, (f) enrichment experiences through direct access to video disc presentations, (g) the collection, storage and presentation of data, (h) searching the internet for information, (i) computing where complex calculation is required, and (j) robotic performances of complex tasks.

Issue 3: Further Education and Career Choice in Science and Technology

Elaboration. Issues 1 and 2 raise problems that are related indirectly with a choice of a career in the fields of science and technology, but without considering directly the factors that might influence the possibility of such a choice among students of 15 years of age. The choice of a

career in a field of endeavour that is related to science and technology is influenced by many factors that operate at the individual, classroom, school and systemic levels. Consequently it would be incomplete and inadequate merely to examine the issue of career choice in terms of individual student characteristics, when the home and the peer group as well as the climates of the classroom and the school are also involved. Moreover, it is evident in some countries that there is widespread acceptance that it is cheaper to recruit a highly skilled and scientifically and technologically trained workforce from other countries than to attempt to lift the level of education in a country that has a pressing need to recruit such highly skilled workers.

Implementation: In order to examine the effects of factors at different levels both within and between countries it is necessary to obtain from students, parents, teachers, and school administrators information that would help to address the issues of career choice in science and technology. Of particular importance would be the information that could be readily obtained from students on their expected occupation in a form that would enable the occupation to be coded as scientifically oriented, technologically oriented, or as a non-scientific and non-technological occupation. It should be noted that 12 years ago a study that would investigate such issues through secondary data analysis had to be abandoned, because the computer programs that would permit an analysis at the student, school and systemic levels were not at that time available. This situation has been remedied and such a study is clearly warranted. Moreover, planning should be undertaken from the outset to conduct, if possible, a longitudinal study that followed individuals from the age of 15 years over a decade or more. The identification of factors that influenced the career paths of such students as they moved from school to further education and on into stable careers that were scientifically and technologically oriented or otherwise would be of considerable value.

Issue 4: Attitudes to Science and their Effects

Elaboration: The issue of career choice, raised in the preceding section, depends at least in part, on the question of the contribution of attitudes towards science and technology in decision making by individual students for a career in these fields. The investigation of attitudes towards science and technology is not without its problems and there are skeptics who challenge the meaningfulness of the information obtained through the administration of questionnaires with Likert type scales. Nevertheless, considerable progress has been made towards the measurement of attitudes and values using item response theory to obtain interval scaled data, that permits not only the use of attitudinal data as predictor measures, but also the use of attitudinal variables as criterion, or mediating variables in both multilevel and multivariate models to build a greater understanding of the different factors that operate to influence educational outcomes.

Implementation: It is important that a range of attitude scales should be constructed to access a range of attitudinal dimensions which contribute towards achievement and behavioural outcomes. Attitude scales that have been employed in past studies include: (a) beneficial effects of science; (b) interest in learning science; (c) ease of learning science, and (d) career interest in science. (see Keeves, 1992 a and b). In addition, the classification of attitudes, interests, and orientation advanced by Klopfer (1971) provide a valuable framework for the assessment in the affective domain in the fields of science and technology. It is important to note that at least seven items should be employed within each scale in order to obtain scales with sufficient content coverage to provide a meaningful and internally consistent scale and so warrant the use of Rasch scaled scores. Too often in survey research studies, space and time constraints restrict the attitudinal information collected to single items. While such limited information has some value it would appear to have relatively little explanatory power that would lead to a greater understanding of the effects of attitudes on achievement and the choice of a career oriented towards science and technology.

Issue 5: Gender and Student Performance and Attitudes

Elaboration: Over the past 40 years cross-national comparative studies have helped trace and explain the differences in the changes that have occurred in the composition and performance by sex of student and teacher in different fields of education, as well as achieving a greater understanding of gender effects on educational outcomes. Several indexes associated with equality between the sexes in educational participation and provision have shown clearly identifiable changes over time, namely:

- substantial falls in the ratio of male to female students at the terminal year of secondary schooling, with similar falls at grade levels beyond the stage of compulsory schooling;
- falls in the ratio of male to female teachers at the secondary school and higher education levels;
- in countries where some single-sex schools formerly existed, there were substantial declines in the ratio of single-sex to coeducational schools (Keeves, 1992a and b).

These effects would appear to indicate a changing role of women in society and a pressure for greater equity in educational and occupational participation between the sexes.

These changes have also been accompanied by a reduction in the difference between the sexes in achievement in the physical sciences and mathematics, together with a greater degree of participation by girls in these subjects (Keeves 1992 a and b). Nevertheless, more than 20 years ago there were signs of disturbing effects emerging at the terminal secondary school level in some countries where the ratio of male to female students in academic schooling fell to as low as 0.5 (Keeves, 1992 a and b). It would appear that for various reasons boys in some countries were opting out from formal academic education, preferring to move more rapidly towards employment and the earning of money and away from the more rigorous subjects of mathematics and science. Baker and Jones (1993) have shown a clear relationship between the increasing rate of participation of women in the labour force and the rate of reduction of differences between boys and girls in mathematics achievement at the lower and middle secondary school levels. This study would seem to provide evidence for relationships between societal forces that influence participation in the labour force and educational outcomes in so far as differences between the sexes are involved.

Implementation: There is clearly a need to monitor change in the differences between the sexes in participation, achievement and attitudes in the field of mathematics, science and technology education over time, and to seek explanation between the effects observed and societal forces. The changes that have been observed and associated with gender effects indicate quite clearly the likelihood that such effects are not only societal in nature, but also run the risk of giving rise to effects that are prejudicial to the best interests of boys. An inquiry into these effects within one culture is unlikely to provide an understanding of their nature and consequences, and the opportunity to undertake a cross cultural investigation at a level of education where the whole of an age group is involved, namely at the last stage before differential dropping out from school can occur, is likely to be highly rewarding.

Issue 6: Students' Engagement in Learning Science and Technology

Elaboration. The most powerful factor and the most strongly contested in curriculum planning, but the most poorly researched and monitored in the practice of teaching and learning is that of time in its many different forms, including curricular time, engaged time, homework time, and time spent on different types of activity in the classroom. Carroll's (1963) model of school learning draws attention to the importance of time in teaching and learning in the classroom

situation, but the findings of the limited body of research carried out to test this model continue to be largely ignored. While there are considerable difficulties in measuring the different relevant aspects of time involved in school learning, this should not lead to a complete rejection of all attempts to estimate the effects of time on the learning of science and technology in schools, in the home, as a member of the peer group in hobby activities, and through informal learning by visiting museums, watching television programs that present scientific information, reading science magazines, searching the internet for scientific material, and engaging in bird watching, naturalist field studies and the systematic recording of weather data. The significance of the different aspects of time for learning in science and other fields warrants not only the examination of the explanatory power of such time based measures, but also the examination of factors that influence engagement and participation.

Implementation. The collection of information on the different relevant aspects of time involved in school learning presents problems for those responsible for the construction of questionnaires for the students, parents, teachers and school administrators, but the use of multilevel analytical procedures enable the effects of data that may provide under-estimates at the individual level to be aggregated and examined meaningfully at the school and national levels. Moreover, time is a measure that has the same meaning across different countries and cultures and as a consequence sound comparisons can be made at the higher levels of analysis. It is also important to recognise that the effects of time on learning are cumulative. Consequently, the strong evidence (Keeves, 1992 a and b; Postlethwaite and Wiley, 1992) of accumulative effects of learning at the primary school stage on learning at the secondary school stage should be taken into consideration in estimating the accumulative effects of curricular time. Furthermore, consideration should be given to the estimation of curricular time spent on learning in the different fields of science, Biology, Chemistry, Physics, Earth Science, Psychology and Physical Geography, as well as the estimation of viewing time and viewing participation by school-aged students of science-oriented television programs.

Issue 7: Parental Investment in Scientific and Technological Literacy

Elaboration. While the teaching profession has largely ensured that the fields of science and technology are in the main divorced from one another in the curricula of the schools, this is not so in the home, in leisure time activities and in the work place. Moreover, it should be clearly recognised that technological development is the major reason for the significant place that science now holds in the school curriculum at all levels. Consequently in any examination of the effects of parental investment in scientific literacy it would seem essential that this separation is not maintained. Parental investment involves both a time commitment and a financial commitment, since not only do children learn from their parents by example and joint participation, but they also learn as a consequence of the provision of books, scientifically-oriented toys and games, access to a computer and recording equipment, and opportunities to visit museums, technology display centres, zoological gardens and natural history excursions. Effects that are commonly ascribed to socio-economic status and parental educational level or to the resources of the home are, in general, more appropriately attributed to the practices of the home and the things that parents do to develop particular interests, attitudes and values in their children as well as to develop their children's levels of cognitive and physical skills.

Implementation. Information on parental investment in scientific and technological literacy is probably best obtained from the parents themselves, although the administration of a questionnaire to parents is likely to give rise to substantial missing data, which is difficult to cover by imputation, since failure to respond is itself an indicator of lack of parental investment in their children's education. Consequently, information on parental investment is necessarily obtained from the students under survey, thus limiting the amount and nature of the information that can be

collected. It should also be noted that information obtained from students or parents can be aggregated to the school and community levels, and would thus form a variant of 'social and cultural' capital. Perhaps, at the school and country level a term involving the idea of 'scientific and technological' capital is required in order to indicate the level of interest and involvement of each community in scientific and technological matters.

Issue 8: Science and the Environment

Elaboration. The issues of concern that relate to the environment are associated with the science and technology curricula of the schools in so far as some environmental problems have their origins in scientific and technological development. Moreover, commonly there is reliance on science and technology to monitor environmental change and to indicate whether environmental conditions are deteriorating. However, in some countries, Australia for example, concern for the environment is not associated with the science and technology curricula, but directly linked to learning about society and is thus seen to involve primarily attitude change rather than being based on knowledge and understandings. Consequently, the policy issues in the field of education involve not only the place that environmental issues hold in the science and technology curricula, but also the attitudes held by students concerning the beneficial and harmful effects of science, that arise from learning about the society in which the students live.

Implementation. The issues involving science and the environment require that not only should questions be asked in the cognitive tests that can be attributed to the structure and nature of the science curriculum, but questions should also be asked through the attitude questionnaires. In the assessment of attitudes it should be noted that evidence from cross-national surveys (Keeves, 1992a) has indicated that the concern for the beneficial aspects of science and concern for the harmful aspects of science do not lie along the same dimension and the use of separate scales would seem to be essential. However, responses to such scales may not arise from the structure and nature of the science and technology curricula but from other areas of the school curriculum, and information on the curricular source of such attitudes should also be sought. Furthermore, the sources of both information about environmental issues as well as attitudes also involve the home and the media as well as the peer group and the wider community. Moreover, it is largely through the home and the wider community that environmental degradation originates. From the educational viewpoint, not only are the levels of knowledge and attitude of importance, but the sources of ideas are of considerable importance if educational practices are to respond to the findings of the PISA study.

Issue 9: Teaching and Learning of Science

Elaboration. Science is the only subject in the school curriculum in which information obtained through the senses from the real world is used through the process of induction to form knowledge about the real world. In addition, when deductions are drawn from knowledge already held, science requires that the deduced ideas and relationships must be tested against observations from the real world, or through experiment and observation in the real world, before the ideas and relationships are accepted as an adequate account of those aspects of the real world under consideration. This latter process involves modelling the real world and the testing of the model against the real world. Some aspects of mathematics also involve a more extensive use of deductive processes, and statistics involves checking the adequacy of a model in a stochastic way. Learning through computer technology develops certain skills that are similar to learning in science, but the process of checking ideas and relationships in computerised learning involves immediate feedback from the machine in testing the ideas and relationships against observations drawn from the real world. While much of science teaching is expository and declarative, the processes of science teaching and learning largely involve the forming of models of the real world

through the operations of induction and deduction and the subsequent testing of these models. These processes are the bases of inquiry, and the critical operation of inquiry involves testing propositions, hypotheses or models, in the real world. No school subject, apart from science, seeks to build knowledge in this way. These operations place the learning of science in an almost unique position. While induction and the associated observations are important to science and are seen as part of the inquiry process, the key processes of modern science are the formulation of hypotheses and models, and the testing of the models is a critical part of the process. The deduction component and the design and conduct of an experiment is clearly investigatory in nature but the modelling process is central to learning about the tactics and strategies of science, and to understanding the nature of science, as well as building a deeper understanding of scientific principles, ideas and relationships.

The learning of science involves (a) training in observation and induction, (b) training in deduction to form hypotheses and models, (c) designing of experiments to test a model, and (d) conducting an experiment to test the proposed model. These processes are set in stages by Piagetian theory and Shayer and Adey (1981, 2002) argue that the learning of science not only involves the development of understanding of key scientific ideas and relationships, but also the development in schooling of those cognitive skills that are involved in scientific thinking at appropriate stages in the students' education.

Implementation. The administration of achievement tests in science at the 15 year-old age level is carried out at a stage when the student is in a transition phase of learning that involves the modelling process. As a consequence the test items employed should range across the SOLO Taxonomic levels described by Biggs and Collis (1992). These levels are not dissimilar to the levels proposed in the revised Bloom taxonomy by Anderson and his colleagues (Anderson, 2001).

Other aspects of the testing program in science and technology would seem to require: (a) an assessment of understanding the relationships between Science, Technology and Society, (Aikenhead and Ryan, 1992; Tedman, 2002), (b) attitudes associated with the learning of science discussed under Issue 4, and (c) an assessment of the classroom climate to indicate the emphases placed on inquiry and the modelling approach, in contrast to an over emphasis on factual knowledge and examination performance, or a concern for the interests and needs of individual students (see Keeves, 1992a).

Issue 10: Teachers of Science

Elaboration. The major problem in the learning and teaching of science in the countries of the Western world is the serious shortage of teachers in the fields of physics, chemistry and earth science. There would appear to be an adequate supply of teachers of biology, but with an over supply of female teachers. The problem of shortage of well qualified science teachers has existed in most Western countries for at least 15 years and is becoming more acute as older qualified teachers reach retirement age without an adequate supply of younger teachers graduating from universities to take their place. Because computer based technology is an emerging field there is a similar acute problem in this field that is accentuated because mathematics, the physical sciences and ICT teachers are drawn from the pool of graduating students who can find more lucrative work in the commercial and industrial ICT fields. There is no immediate solution to this problem, since the payment of salary supplements in order to attract sufficient numbers of teachers, who have been trained in mathematics, physical sciences and ICT, to fill the vacancies that exist, would exceed the financial resources available. Other alternatives would involve greatly increased class sizes, or would produce a marked imbalance between the regular teaching salaries and the salaries of those receiving salary supplements to teach mathematics, the physical sciences and technology.

Implications. The important information that does not currently appear to be available is baseline information to model the qualifications, salaries and fields of expertise of teachers currently in schools who are teaching in the different fields of the physical sciences, mathematics and ICT. Information on the supply of new teachers should be readily available from the training institutions, but the characteristics of the current teaching force in these fields, where there is known to be a shortage, would not seem to be available. As a consequence there would appear to be large numbers of mathematics and physical science and technology classes at the secondary school level in most countries of the Western world in which students are being taught by unqualified or under-qualified teachers. During recent decades the teaching of science in many countries has been extended throughout the primary school years where the teachers have little knowledge of the science required to undertake the effective teaching of scientific ideas. However, this critical problem while having implications for the PISA studies is outside PISA fields of survey, and OECD should investigate this problem through other studies that would give rise to models of the demand and supply of manpower in this field.

CONCLUSION

The nature of the PISA studies that involve the administration of testing programs at regular intervals of three and nine years for students at the terminal stage of compulsory schooling in most Western countries, does not commit PISA to seeking to provide a greater understanding of the educational processes that operate across the 12 years of schooling in most countries. IEA has for more than 40 years sought to investigate these educative processes in a wide range of school subjects at several levels of schooling using the countries taking part in IEA studies to form a natural laboratory. The role of the PISA studies would appear to be the monitoring of change over time in achievement and the educational processes that influence achievement. Consequently, from the ten issues discussed above, themes should be chosen that are within PISA's mandate of monitoring change. However, PISA is necessarily involved in providing, where possible, some explanation for the changes that it records and presents. This requires not only a knowledge of the educational processes that have been discussed in IEA studies, but also the modelling and testing of models that provide explanation for the changes that are observed in PISA studies. Scholars who are involved in the design and planning of PISA studies must accept this long range perspective of monitoring change, and must not only try to ensure that appropriate information on student achievement is collected, but also that appropriate information on explanatory variables is also assembled for use on later occasions. From the monitoring of change and the efforts to explain change it is likely that a deeper understanding of educational processes will emerge as Baker and Jones (1993) and Hanushek and Kimko (2000) have shown for problems that appeared unsolvable a decade or more earlier. It is fortunate indeed that analytical procedures were developed during the 1990s and that their development is continuing which permit the examination of multilevel longitudinal data. Moreover, the statistical information currently being assembled both rigorously and systematically by OECD (1992, et seq.) in the *Education at a Glance* series of publications provides data at the national level that was previously unavailable. However, the PISA studies that are conducted cross-nationally must be supported by intra-national longitudinal studies that seek explanation at the individual and school levels. PISA has the very challenging task of monitoring change in achievement and educational processes at the national level, with a rapidly growing body of countries participating. This task must be done to the highest standards by those who are committed to the work.

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Taiwanese Students' Perspectives on Their Educational Experiences in the United States

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The United States welcomes a great many international students each year. Asian students make up the fastest growing segment of this international student body. Asian students have to deal with bicultural conflicts on many fronts in order to achieve a balance between participating in a new cultural environment and maintaining their own cultural identity. At the same time, they are likely to experience a great deal of homesickness. In this study, the investigators explored these issues with five Taiwanese students during their first academic year at a Midwestern university, hoping to gain insights about this uniquely situated group of Asian international students. In-depth interviews were conducted. An exploration of the pre-entry and early integration phases of study abroad was the focus of analysis. Thematic categories were identified.

Cultural identity, adjustment, international students, Taiwan, stress,
United States of America

INTRODUCTION

The United States welcomes a great many international students each year. During the 1997-98 academic year, for instance, a total of 481,280 international students studied at the undergraduate and postgraduate levels at American colleges and universities; making up 3.4 per cent of the country's higher education population (Walker, 2000). Asian students represent the fastest growing segment of this international student body (Walker, 2000). In order to attract international students and meet the challenges of providing them with high quality education, adequate resources, and effective support, United States faculty members and university officials in the United States need to understand better the experiences these students have. They need to learn what happens to international students on their campuses and in their neighbourhoods. Many questions arise: (a) what does the chance to be educated in the United States mean to international students; (b) what do they have to cope with in order to make education abroad a reality; (c) what circumstances may compromise their efforts to get a good education in America; and (d) what kinds of classroom strategies and university infrastructure would assist them to achieve these ends?

In the study reported here we explored these issues with five Taiwanese students during their first academic year at a Midwestern university, hoping to gain insights about this uniquely situated group of Asian international students. Using in-depth interviews conducted in their first language we attempted to document their point of view about education and life in America.

BACKGROUND

Lu (1991) described the major motivations that encouraged Taiwanese students to look to the United States for advanced education as: (a) the attraction of media discourse about the so-called 'American Dream;' (b) the Taiwanese respect for their country's citizens who hold United States degrees; (c) the admiration for the quality of education in the United States; and (d) the potential opportunities for work experience in the United States. While education abroad holds much promise, extant literature suggests that as international students are exposed to unfamiliar environments in the United States, they may experience anxiety, confusion, and depression (Lin and Yi, 1997). Difficulty mastering the use of the English language can be a major barrier in their adjustment to the American classroom and to the society in general. Interactions with American students can be problematic as well. From international students' perspective they are sometimes treated rudely, stereotypically, or insensitively (Senyshyn, Warford, and Zhan, 2000). Factors that have been found to predict how well individual students adjust in their first semesters abroad include: gender, age, family circumstances, emotional coping strategies, understanding about the United States, foresight about potential difficulties, and English language capability (Lu, 1991).

The preparation to come to the United States is important for international students; what happens then tends to influence their adjustment in the United States (Lu, 1991). Upon their arrival in the United States, Asian students have to deal with bicultural conflicts on many fronts in order to achieve a balance between participating in a new way of life and maintaining their own cultural identity. At the same time, they most likely experience a great deal of homesickness (Mori, 2000). Because studying abroad is a great honour for people in their home society, students also experience the pressure of parents', relatives', friends', and sponsoring organisations' expectations for high academic achievement and success (Mori, 2000; Pedersen, 1991). An exploration of the pre-entry and early integration phases of study abroad seems especially important in planning educational programs to meet the needs of international students. These phenomena were chosen as the foci of this study. Future investigations might be aimed at understanding the later phases of study abroad because even in contexts of successful adaptation to American education, international students face a further challenge at the culmination of their efforts when they must re-integrate in their home countries after spending years away.

METHOD

Sample

For this in-depth qualitative investigation of Taiwanese students' learning experiences in the United States, five participants were recruited through snowball sampling. The first author, a member of the Taiwanese Student Association at the university where the study was being conducted, brought information about the research to friends and associates. The study became known by word of mouth in the small community of Taiwanese students on campus and five students eventually volunteered. All of them were born in Taiwan, held F-1 student visas, and were in the middle of their first year of study in the United States. They were pursuing a variety of majors. Three were women; two were men. One was an undergraduate student and four were postgraduate students. Their ages ranged from 23 to 27 years. All students were financially sponsored by their families in Taiwan.

Data Collection

Each participant provided informed consent and then engaged in a semi-structured, audio-taped interview of two hours duration. The interview guide consisted of open-ended questions posed in Chinese using Chinese concepts about (a) what inspired participants to study in the United States; (b) how they had prepared to come to America; (c) what they had expected college life to be like

in the United States; and (d) how their goals for the future had influenced their choice of the United States as a place to study. They were asked to describe what it was like when they first arrived and how they had adjusted over the first few months. Questions also prompted them to talk about any difficulties they had encountered, who might have helped them along the way, and what they enjoyed about being in the United States. Finally they were asked to discuss what faculty members and other university personnel in the United States could do better to assist international students like themselves.

Interviews were conducted in Chinese by the first author as a means to ease disclosure and make the interviews resemble natural conversations. A private setting was chosen for each interview; two were interviewed in the students' homes, and three in the home of the first author. Participants were promised confidentiality. Details of their narratives have been changed as necessary to protect their anonymity. All procedures were approved by the University Institutional Review Board.

Analysis

The first author listened to the Chinese language interview tapes, translated them, and typed them in English. The English language texts then served as the data for analysis by both authors. Throughout the analyses the first author went back to the Chinese language tapes to verify meanings of the stories before translation. She consulted with bilingual colleagues as well to assure the adequacy of her translations of participants' stories into English words and concepts.

Narrative strategies were used to examine the data. In an initial iteration, events recounted in each interview were arranged in chronological order and a flow chart was constructed to examine developmental patterns and staging for each participant. Then the flow charts of chronological events of all five participants were compared and contrasted to identify similar and differing experiences across the sample. In the next step, verbatim English translations of the interviews were coded thematically using content analysis. Quotes from participants illustrate each theme in the report of findings.

As part of the analysis, a close look was undertaken into insider-outsider issues. Because the first author was herself an international graduate student from Taiwan, she shared many elements of their histories, culture, and circumstances with the other participants. She was able to identify and follow up cultural and experiential content in the interview setting that an outsider may have missed. She was a trusted member of the group to whom they could explain positive as well as negative experiences without fear of causing insult or incurring reprisal. Such openness was not likely to have been possible with an American interviewer or with an interviewer who was a faculty member (a position held by the second author) because of possible constraints of respect and deference. The ability to converse in the students' first language no doubt increased the spontaneity and comfort of both the participants and the interviewer, thereby increasing authenticity and candour.

In order to balance this insider perspective, the authors discussed the stories participants told and the meanings this information might have for international students as well as for United States educators. Such dialogue worked to tighten the conceptual translations of the verbatim Chinese as each tried to clarify the subtleties of the story in Chinese and how this might best be conveyed in English. This collaboration also helped the authors reflect on the importance of the subjective experiences of the Taiwanese author during her first year studying in the United States, and how those experiences motivated the study. This made the authors particularly sensitive to the issues at hand. The second author, too, was forced to look at assumptions that might have guided her educational practice that were at odds with what these particular international students found to be

helpful. Such reflexivity was considered a necessary ingredient to assure the scientific adequacy of qualitative research (Hall and Stevens, 1991).

FINDINGS

An exploration of the pre-entry and early integration phases of studying abroad was the focus of the analysis. Within each of these phases the following thematic categories were identified: (a) inspiration for studying abroad, (b) things at stake in initiating international study, (c) preparations for becoming a student in the United States, (d) initial responses to an unfamiliar environment, (e) early experiences in American society, and (f) the impact of stress on their lives. In addition to these findings, participants offered suggestions concerning what faculty members and other university personnel might do to ease the difficulties international students faced.

Inspiration for studying abroad

Participants described multiple sources of inspiration for studying in American universities: growing up idealising America, wanting a competitive edge in the Taiwanese job market, wishing to avoid the competition they faced in the Taiwanese university system, desiring greater choice about the major course they studied, and wishing to broaden their life experiences.

Idealised America

Participants talked about when and how they first imagined coming to the United States to study and it usually involved believing in some rendition of the 'American Dream'. They grew up learning about America from television, movies, and books. America was the land of plenty, the incubator of the world's most innovative new knowledge, the place where a poor man could become rich. America had the best universities and the best jobs. Particularly when participants found themselves dissatisfied with the rigidity of the education system in Taiwan, they assumed everything in the United States must be better. One respondent said:

Studying in America has been my dream since I was a child. Teachers kept telling us that studying abroad is better than studying in Taiwan.

Competitive edge

Getting a United States degree promised a competitive edge among their Taiwanese peers. Students believed that if they studied in the United States they would learn to speak English better than those students who remained in Taiwan; and that capability would win them a better job. Finding a better job, in turn, would honour their families. They also spoke of a common attitude in Taiwan – that employers regard degrees from abroad more highly than domestic degrees. One respondent stated:

In Taiwan, people still believe that the person who gets a degree from outside of Taiwan is better than the one who gets a degree from Taiwan. People respect the person who has the background of studying abroad. I don't know whether the situation indicates that Taiwanese have blind admiration of things foreign, but I think to study abroad can put me in a better position to compete with other people. If I can get the degree from the United States, that means my English is better than the person who has a Taiwanese Master's degree. Then I can get more opportunities to find a good job.

Avoiding competition

Studying in the United States can also help students avoid competition. Attending a prestigious school is greatly valued in Taiwan, but the competition for admission to the top-ranked Taiwanese

universities is quite stiff. Only a small proportion of applicants get accepted into postgraduate study there. According to official statistics, 1.2 per cent of the total applicant pool was admitted to Taiwanese postgraduate programs (Tseng, 2000). The responses of two of the students interviewed were:

I decided to study for my Master's degree after I graduated from university, but the competition for enrolling in Taiwanese graduate schools is very serious.

The reason I decided to study abroad is that it is so difficult to compete with people who take entrance examinations for graduate school in Taiwan.

Choice of field of study

Taiwanese students take national examinations to enter high school, university, and graduate school. Their examination scores correlate directly with the major courses that they pursue, and thus can limit their choice of field of study. Because of the more flexible application systems in the United States, Taiwanese students who wish to pursue a major course from which they would be exempted by their examination score, find applying to schools in America an attractive option. One student said:

I found there are problems in the educational system in Taiwan. For example, my major was decided by the score of my national entrance examination. I didn't even know what my interest was, but my score decided everything for me. I had to major in Finance. When I studied it in school, I found I did not like it. I wanted to transfer to another department, but my department didn't allow me to. In other words, I couldn't take classes that I was interested in.

Broader life experiences

Studying abroad was also a wonderful chance to experience new and different things. The participants strongly believed that schooling in the United States could open their minds and enrich their lives and one commented:

One who goes to graduate school must not only have profound knowledge, but also have an open-mind, and understand that there are many differences between Western and Eastern cultures. Studying abroad is a good chance for me to experience all of these things.

Things at stake in initiating international study

Studying abroad is considered a risk-taking venture for these students. Taiwanese families traditionally expect that upon completing higher education their children would get good jobs and attain independence and success. Two respondents said:

To be honest, I had not dared think of graduate study abroad because in Taiwan we are expected to work as soon as possible after we graduate from the university. I didn't want my family to take care of me. I hoped I could be an independent person as soon as possible.

Family approval was crucial for these participants, therefore:

When the idea of studying abroad came up, I doubted whether my family could support me. My family's attitude was positive. Because they thought as long as it is good for me, they would support me forever. Their attitude really impelled me to make the decision.

Preparations for becoming a student in the United States

Once these students had been inspired to study abroad and had the encouragement of their families, there were a number of concrete preparations they had to make. They had to study for and score well on the English language exam (TOEFL) and the appropriate United States standardised test (for example, the Graduate Record Examination (GRE) for graduate admission), make application to American schools, and then choose which university to attend. Getting an adequate score on the TOEFL was a challenge. Because they wanted to do well, they attended intense, short-term courses at English training centres in Taiwan specially designed to prepare students who wish to study abroad. Advisers at the English training centers provided information on the ranking and prestige of universities in the United States and the examination scores required for admission to each college or university. They also helped translate application documents.

In choosing between schools, they prioritised rank, which reflected the Taiwanese emphasis on the honour of attending a famous school. One respondent stated:

I applied to schools based on their rank, tuition, and TOEFL score requirements. The rank of the university was my first priority, but which schools would consider me was decided by my TOEFL score. The last concern was whether the city was interesting or not. For example, if the city had played an important role in America's history, my impression was that it would have special characteristics.

In order to provide the greatest possible opportunity and choice, students submitted applications to several schools. An indication of a positive admission decision came in the form of an I-20, which is an approval document from a university that allows an individual to get a student visa to enter the United States. The receipt of an I-20 was a landmark event, which brought with it excitement as well as anxiety. One respondent said:

When the university sent the I-20 to me, I felt so odd. One part of me was excited because now I could study abroad. It was real, not a dream. That first feeling was happy, but it was followed by hesitation. Is my English good enough to study abroad? Fear and worry filled my mind. I even doubted if I could get to the airport. My family was my first concern. Two years...I don't know...maybe in two years being away their health will fail. How will they do?

Initial responses to an unfamiliar environment

With all their expectations and conflicting feelings participants packed their belongings to face the future in the United States. When they arrived, their emotions became even more complex as they were disillusioned, felt terribly homesick, and became overwhelmed by their worry about the burden their families were enduring.

Disillusionment

The first and hardest thing students faced was that America was **not** completely good. Their images of America did not fit the reality, and they began to doubt whether their decision to study in the United States had been a wise one. Two comments demonstrate their feelings:

I found I didn't understand America at all. It is not what I imagined. I thought America was an advanced country and everything was clear and brilliant. The first impression I had was that it was grey. And I got lost all the time. Everything was so complicated. I felt upset. I thought, why did I come here?

My teacher in Taiwan used to tell us of situations in America., but maybe it was a long time ago. Something changed. He said Americans are so polite. But I came here and found everything is different from what my teacher said. My neighbour always dumps trash in the hall, and doesn't care how other people feel. Wine bottles and cigarette butts can be seen everywhere, and nobody cares how other people feel.

Homesickness

Living in this unfamiliar environment, missing their families, having to speak a foreign language, and eating food very different from what they were used to, made participants feel homesick. Two of them said:

I missed my family very much. During the first month, whenever I saw anything that reminded me of Taiwan, I cried. I wanted to go home, but I couldn't.

In the first semester I had a strong motive to give up everything. I was sad. I wanted to go home. I asked myself, "Why did I want to come here?"

Family concerns

Once they arrived and realised how much everything cost, participants began to understand how expensive their stay in the United States was going to be for their families. They were shocked by the amount of money necessary to pay for tuition, room and board, books and school supplies, and daily incidentals. They felt guilty about placing such a heavy burden on their families and were embarrassed to have to keep asking for money from their parents. Paradoxically, the more family support and willingness to pay the students experienced, the more stress they felt. Some of the comments made by the students were:

My parents have many children, and everybody is studying. It's a heavy burden for them. I can't imagine how much money I will have them spend before I am through. My family's support makes me feel more stressful.

I am shocked to need so much money. Actually, I make a plan how to spend my money carefully every month, but 'you cannot make bricks without straw'. So when I find my money is going to be used up, I have to call my family, even though I don't want to.

I cried for my family. They are fine, but ...for example, I called my parents for tuition. My mother said OK, but she kept asking, "When do you need money? Because the exchange rate is so high now. Can I wire money after it goes down?" When I hung up the telephone, I stayed in the bathroom and cried and cried. Every time I call my parents for money, they never reject me; instead they comfort me. That makes me feel so sad.

Participants also felt overwhelmed by the academic success they believed they owed their families. Studying abroad was not just fulfilment of a personal desire, but encompassed a responsibility to family. Some observations made were:

I must get the result. I mean the grade. My parents invest money on me, and the only thing that they can get is my grade. So I have to study hard for them. I have spent much money so far, and I have to get the result.

I know my mother put all of her expectations on me; I can't disappoint her. In the first semester, I had a strong desire to give up everything. But I can't do that. My uncle told me that I needed to hold on for my mother because she sponsored me to study abroad with great difficulty. No matter how stressful, I couldn't give up. He said "What you do is not only for yourself, but also for your mother".

Early experiences in American society

Many social situations in the early integration phase of their studies in the United States were difficult because of racial discrimination and language barriers.

Racial discrimination

An early experience each of these students described was feeling discriminated against. Two examples were:

There is serious racial discrimination here. For example, in the supermarket, cashiers are polite to white people. But to us, yellow race, they treat us like we can't afford to purchase their products.

I remember one day soon after I got here; it was a sunny day. I went to a Vietnamese restaurant, and I was waiting for the red light to change into green. Suddenly, one car drove by mine, rolled down the window, and yelled at me. He spat at me, and then drove away.

Participants reported that they observed white people treating African American people differently, not being as friendly and helpful as they were toward other white people. This, in turn, made them uneasy and fearful of being mistreated themselves. The students indicated, however, that they were more frightened of African Americans than they were of white Americans because of the stereotypes they had read about when they were growing up. Other researchers have also found that Asian international students have lower perceived comfort levels with African Americans due to negative portrayals of African Americans on television, in the movies, and in news reports (Talbot, Geelhoed and Ninggal, 1999).

On campus, participants perceived they were treated differently as well. They believed it was because American students saw them as outsiders. Some of the respondents commented:

I find students here are so conservative. They do not believe the experiences of other countries. They criticise the accents, religions, and diets from other countries.

My classmates insist on their thoughts being right. They cannot accept something new from another country. They regard people who are not from here as foreigners.

I am the only international student in my department, so all of the people surrounding me are American. Because of my special appearance, skin color, and language, it feels to me that everybody is watching my performance. I think they feel I am weird. So I have to protect myself.

Maybe the difference is hospitality. Taiwanese never discriminate against foreigners in our country. When we find a foreigner looking lost on the street, we always help them automatically. That does not happen here. Although people always say that the United States is a cultural melting pot, they don't like to learn other cultures.

Participants said that American students tended not to look at them when they spoke and offered little verbal response. Each described instances in which American students avoided them when they were instructed to break up into groups to do group projects. They were commonly left with nobody to partner them. It then became embarrassing because faculty members had to assign students to work with them. One participant reported that classmates treated an Asian Teaching Assistant impolitely, blaming the Teaching Assistant for the difficulty in comprehending the material being taught. One participant reported that a few of her American classmates were "very nice." She said, "They understand my English is not good. They wait and listen to me patiently or

speak slower.” Overall, however, participants felt it was difficult to make friends with American students.

Language barrier

Language posed many problems socially as well as academically at the beginning of their time in the United States. Some issues that drew comments were:

Some ideas are easy to describe in Chinese, but are hard to say in English.

In the beginning, since English is not my native language, when I wanted to describe something, I didn't know which word or grammar was appropriate. The more I worried about my grammar, the more nervous I got. So finally, I kept silent.

It is hard to be involved socially with American students because I can't understand their slang.

Sometimes, my classmates speak so fast that I can't catch what they are talking about. If I ask them 'pardon,' they stop talking with me.

One participant described a situation in which she talked with the professor on the first day of class and explained that she might need some extra help because of her language difficulties. The professor replied, “That is your problem, not mine.” From that time on, the student kept silent in class, but the professor posed questions to her at every meeting. Sometimes when the student could not answer the questions, the professor said something she could not understand and the other students laughed. She felt she was being ‘scoffed at.’

Impact of stress on international students

What was the impact of such stress on these Taiwanese students? In the integration phase of their stay in America, they felt bereft of language and friends.

Losing the ability to communicate

Because of the fundamental differences between Eastern and Western languages, most Asia students have to think in their own language first, and then speak in English. This laborious process of translation was frustrating for participants and they felt robbed of conversational spontaneity. They spoke of it as losing the tool of communication, as if they were suddenly dumb. The more care they took with their English, the more stress they felt. They were hesitant to speak because frustration sapped their confidence. Some students commented:

I remember that first semester; I felt that I was locked in a tower. It is the feeling you have when you have lost your language. I was not a novice in my field of study, but I felt so stupid.

Speaking...I felt I was an orphan because of my English problem, without support from anyone. I was like a bird without wings.

It was so painful to me. I wanted to express my thoughts, but I could not express them. So I thought I was an idiot in class.

My problem is not whether I can talk with people or not, but rather whether my English can attract people's attention, because in a group, people keep talking and it is impossible for me to get into the conversation or interrupt them and get them to listen to me. What I hope is that my English will improve so that my talk can attract people's attention.

Because of their fears about understanding and expressing themselves in English, these students were hesitant to interact with American students. Several of them said:

I felt pressure to talk with the American students, but I didn't know what they were talking about. I remember one experience when I asked one of my classmates what the teacher had said. He said lots of words; I didn't understand anything. My response was "Thank you." I seldom talked after that.

I was so frightened to try to establish relationships with my classmates at the beginning. I would always choose the seat in the back corner of the classroom. Nobody sat by the break, nobody sat beside me. I isolated myself this way.

I always used the bathroom one floor down from my classroom. I didn't want to meet any students from the class at the bathroom because I didn't know what I was supposed to talk to them about.

The Taiwanese students did not always retreat from American students. They made efforts to interact, but met with lots of challenges. Several studies have shown that American students interact with international students only superficially, and as a result many international students give up trying to establish deep cross-cultural relationships (Mallinckrodt and Leong, 1992). Some comments made were:

Initially, my classmates like to talk with me. But after they found I have an English problem, they don't want to talk with me. Especially, if my classmates whisper to me during class. I don't understand. Even though they might be telling me a joke, I have no response because I don't understand. After a couple times, they don't like to talk with me.

Once I was talking to a classmate and another American student I knew walked up. They had never met each other before, but immediately they started to talk to each other and ignore me. I hate this feeling. I admit I am not a person good at social communication, but in Chinese society I have never been ignored. This feeling forces me to arm myself. There are many ways to arm myself; one is to pretend I understand Americans' talking when I really don't understand. This is a painful experience. I don't like the hypocritical feeling, but I don't like people feeling bored talking with me either.

Loneliness

Language difficulties contributed to participants' loneliness. In addition, there were tremendous cultural differences to contend with in order to meet and be with local people. One participant brought up this example: physical touch and walking hand in hand are the signs of close friendship between women in Taiwan. She came to understand that such behaviour in America is seen to be strange. The loss of this display of tenderness made the student feel particularly lonely. Other routines of camaraderie that participants were used to in Taiwan did not occur on their United States campus. Some examples from students' comments were:

American people emphasise the individual, but Taiwanese care about the group. I mean Taiwanese students like to work together. We chat, go shopping, do homework together after class, but American students like their own individual life after class. I feel lonely.

Sometimes I am like an abandoned puppy; nobody cares about me. I feel a sense of emptiness. It is most serious in the evening. I am afraid of the feeling of emptiness.

When the feeling comes, I absolutely can't stay at home alone. It is like people abandon you in America.

These students coped with their loneliness by seeking out the company of other Taiwanese students on campus. While this group was relatively small and dispersed throughout the various academic majors, in time they became acquainted with one another. Participants recalled that by the second semester they had started to feel a sense of belonging, most strongly through their association with other Taiwanese students. Some comments noted were:

When I became acquainted with my friend (another Taiwanese student), it made me feel that somebody was standing by me.

When you have unhappy things happen and you lose self-confidence in the initial phase you need some people to listen to your complaints. It is impossible to complain in English. Chinese is the major instrument for complaining. So Taiwanese students were my major listeners. Taiwanese students all have similar situations so we can support each other.

They also dealt with their loneliness by praying, using the internet to keep in touch with people and events in Taiwan, and rational thinking. A few students said:

When I felt sad I prayed to Buddha to help me.

When people talked in class and I couldn't, I felt nervous and lonely, but I pretended that I was practising my listening comprehension. I comforted myself by means of this thought so that I could change my emotion.

I remember last semester I cried almost everyday, but at the beginning of the second semester, I told myself that I don't want the sad life again. Besides, I could handle the classes better, so I wanted my life to be better.

International students' suggestions for what might help

From their perspective as international students who had been studying in the United States for less than a year, participants offered some suggestions. They believed strongly in the rewards of international study for themselves as well as for the universities they attended. Some of their thoughts and ideas were:

I think that a school that has many international students will become more diversified and energetic. A school's ability to attract international students means that it can go to the world, and so is an excellent school. I think every school should look forward and be open-minded to accept different cultures.

I don't think international students need special counselling services, but we need the feeling of being home. If a school really concerns itself about students, students will feel the school is their home in some way and not only a place to study.

I don't know if the university needs to provide more services to international students, but I feel that the staff of the departments who deal with international students should be nice. When someone treats you nicely, you feel you are valuable.

This is an example of how to make things go better for international students that I heard from a friend at another university. In his experience, after he registered, the Dean of his school met him first. The Dean made a special welcome to him and gave him some suggestions about his study plans. He felt he got respect.

One of the other universities that decided to accept me as a student started sending me information about their city and state. They sent me a letter and asked me if I needed

someone to pick me up at the airport or if I needed a temporary house to stay in. Their literature said that many American students at their campus volunteered to be of service to help international students. The university I chose to come to didn't offer these things, so I worry that it doesn't care about international students.

I don't regret my decision to come here. One thing for sure is that studying abroad can help me have an open mind. After I experience a worldwide viewpoint, I am a totally different person. In other words, disillusionment is the beginning of growing because America is not my paradise any more, but I know I can learn from my experience being here. Studying abroad also makes me see my own country differently. International students are so lucky because not everybody has the chance to live in a completely different place.

DISCUSSION

The small size of the sample and the cultural homogeneity of the participants limit the study's findings. They cannot be taken to represent the general population of international students studying in the United States. It is possible, however, in studies like this one, that the knowledge gained may be transferable to other contexts (Lincoln and Guba, 1985). The rich experiential descriptions offered by these Taiwanese students may serve to inform educational practice and enhance program planning. Larger studies are needed that involve more international students, from more widely dispersed areas of the globe, who might be studying in a number of American universities.

Another limitation of the findings involves language. Because the interviews were conducted in the first language of the Taiwanese participants and first author, the opportunity to engage in unconstrained dialogue during data collection was enhanced, a dynamic that increases validity in qualitative research (Hall and Stevens, 1991). To collaborate with the second author, however, and to make results meaningful to an English-speaking audience of educators in the United States, translation of interview data from Chinese to English was required for analysis. Some loss of concepts and cultural metaphors may have occurred in the translation process.

What we can say from the findings of this study is that studying abroad was an exciting experience for these international students, a dream they made come true, but not without heartaches. An idealised vision of America and the belief that a United States degree would help them to brighter futures in the careers they chose motivated their efforts to gain admission to universities in the United States. A great deal was at stake for them in asking their families to support such an endeavour that raised many questions. Would they succeed in America? Could they be sure of securing a good job upon their return to Taiwan? How could they dare to be independent of their families? Would they be able to live up to their responsibilities? However, because their families encouraged them, they did proceed to the tasks required to gain the all-important I-20 that made their entrance into the United States possible. Intense English language training followed by rigorous testing of their English language capabilities and their potential for academic achievement in the United States finally led them to make application to American colleges and universities. They hoped to attend a university of some prestige and academic standing, both to honour their families and to give them a competitive edge in Taiwan.

Anticipating great things, these Taiwanese young people arrived in a United States that did not match their pre-departure images. They began to very terribly homesick and were overwhelmed by guilt by the burden they had asked their families to bear in financing such expensive schooling. Their early social experiences were frightening as they faced what they perceived to be discriminatory behaviour on and off campus. The racism they observed in their daily activities was very discomfoting as was the apparent lack of openness Americans had toward people from

other countries. Their fledgling fluency in English was a barrier, more socially than academically. These students did not emphasise the anxiety they may have experienced learning in English and getting good grades. Rather, they emphasised the anxiety they had in social situations. They interpreted their inability to articulate in English as a fundamental loss of communication with the Americans who surrounded them. They were hesitant to interact with American students because when they did, they were often impatiently brushed off or ignored.

Thus, the Taiwanese students were very lonely during their first months in the United States. Social customs were different from those at home, and it was so difficult to make friends with American classmates. They thought many times of giving up and returning home. The responsibility they felt to their families and their continuing belief that studying abroad was an unparalleled opportunity to broaden their experiences and enrich their future work lives kept them in the United States. By the second semester they generally did not feel so sad. A developing sense of belonging came particularly with the friendships they cultivated with other international students on campus.

The depth of isolation and loneliness these Taiwanese students described could have led to adjustment problems other researchers have found in populations and samples of international students, including any number of physiological and psychological symptoms, and cognitive fatigue (Mori, 2000). Educational researchers have suggested that those international students who hold the highest expectations about the quality of their lives in the United States may face the most bitter disappointments, resentment, and sadness (Mori, 2000). It may be that the very brightest and most enthusiastic international students are therefore at greatest risk from health problems early in their residence at United States universities.

CONCLUSION

Individual educators can make a difference in the experiences of international students by insisting collectively on services that involve the active participation of American students, are respectfully delivered, and make international students feel like they belong to the university community (Senyshyn, Warford and Zhan, 2000). These services can also make a difference by not assuming academic deficiency from limited English skills or passivity in the classroom (Ladd and Ruby, 1999; Shigaki and Smith 1997).

English language facility can be a significant problem for many international students. For Asian international students in the United States, poor English has been found to be a major stressor (Lin and Yi, 1997). The findings of this study suggest that when international students' difficulties communicating in English are coupled with an atmosphere of racially motivated hostility or indifference toward people from other nations, the situation may become exceedingly painful for them. While most United States universities have language programs to assist students for whom English is a second language (ESL), how many United States universities have in place anti-racist programs to assist the major ethnic group in the student body to eliminate prevailing xenophobic attitudes and behaviours? Are United States university programs sufficiently committed to eradicating all forms of social oppression and racial disadvantage on their campuses to become what a participant in this study called 'schools that can go to the world?'

The economic benefits of attracting international students to academic programs in the United States are well known (Nimmer, 1994). Global politics in the twenty-first century demands that attention be given to international education. In light of the personal struggles international student participants in this study described, excellence in international education can only be achieved when contexts in which racism occurs are changed and parochial worldviews are eliminated.

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Rural Communities-Education Relationship in Developing Countries: The Case of Malawi

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The purpose of this research study was to find out how primary education is related to rural communities in Malawi as one of the developing countries in Africa. The study followed a qualitative design with a phenomenological approach. The population of interest were rural primary school graduates, teachers, students and craftsmen. Data were collected through interviews, focus group discussions and class observations. Data were analysed by coding them into themes and categories that were organised into analytic memos. The major findings were: that there is lack of school involvement in the communities though the communities are greatly involved in the school development activities; that there is a mismatch between some elements of the curriculum and rural environment; that subjects that are earmarked as important for the rural development are ignored in schools and teachers lack skills in these subjects in addition to lacking of teaching and learning materials in the subjects. Hence the relationship between education and rural communities in Malawi needs to be improved.

Rural community, rural development, developing countries, curriculum, Malawi, Africa

BACKGROUND AND STATEMENT OF THE PROBLEM

The problem of primary education in Africa has been a historical phenomenon. African countries have for a long time faced problems of increasing educational quality, equity, access and relevance. Most of them, when they achieved independence, inherited the system of education from their colonial masters. According to Bude (1985), in the 1950s and 1960s, education was seen as a key to political, social and economic development in these newly independent nations. As a result, the education system inherited from the colonial powers was expanded to achieve the goal of mass education and also to train nationals to replace the colonial specialists (Bude, 1985). However, as reported by Bude, little time was devoted to assess if the knowledge taught in schools was relevant to the needs of these nations.

In 1961, African Ministers met at a conference for education in Addis Ababa, Ethiopia, where they agreed to provide all children between 6 and 14 years of age with access to education in their nations. However, despite the efforts made by the nationals and donor community to expand the capacity of the formal education sector, by 1970 it was clear that reaching the intended goals was not possible (Bude, 1985). Later on in 1990, delegates from 155 countries met in Jomtien, Thailand, where they adopted the world declaration on Education for All (Malawi Ministry of Education and UNICEF, 1998). The framework of action that was adopted at this conference to address the needs of all children aged 0 to 18 years covered areas like early childhood care, universal access to and completion of primary education, improvement in learning achievement, reduction of adult illiteracy, expansion of basic education and training for youth and adults, and increased acquisition of knowledge, skills and values held by individuals and families that were required for better living (Malawi Ministry of Education and UNICEF, 1998). With the expansion

of education, the number of those who were educated but not employed also grew. Moreover, the knowledge and skills offered at school had little relevance on the immediate environment (Bude, 1985).

As in other African countries, formal education in Malawi, then Nyasaland, was started by British missionaries in 1875. The major aim of missionary education was to make African children literate so that they could read the Bible and spread the word of God and the benefits of civilised western life (Cameron and Hurst, 1983). However, since the Christian missionaries believed that "idleness leads to vice," they trained some Malawians to become agriculturalists and craftsmen for them to have a steady occupation (Banda, 1982, p.42).

According to Kadzamira and Chibwana (1999, p.7), following the Phelps Stokes Commission's recommendation that there should be co-ordination and supervision of the missions' education efforts and the need to redesign the curriculum that was overloaded with evangelism, the colonial government established the Department of Education to oversee education in the country in 1926. Nevertheless, the major curricular changes in primary education in Malawi occurred when the colonial government began to be actively involved in education and the introduction of secondary education in 1940. As observed by Banda (1982), since education in England had begun to take a different shape during and after the World War, there was pressure from the colonial office in London to redesign the type of education offered in their colonies. This development made education in Malawi reflect that of the British system, far removed from the needs of the local communities. Furthermore, the establishment of secondary education policy influenced other changes in the primary education system. Since there was an urgent need to establish criteria for selecting students from primary school to secondary school, Kadzamira and Chibwana (1999, p.7) observed that the colonial government established a "centrally organised examination system" and "set standards for curriculum content so that all pupils could have equal chances of competing in final examinations at primary level," hence making it more academic, selective and examination oriented. In the same vein, Banda (1982, p.90) reported that it was during this period that the industrial curriculum that influenced mission schools began changing its direction and, by 1950, the industrial part of training was phased out.

In 1964, when the Malawi government became independent, there was a great need to educate Malawians in order to promote social and economic development. Consequently, the Malawi government increased the number of primary schools to enable more children access to education (Lumphenzi-Banda, 1990). However, Hauya (1991) pointed out that in 1964 Malawi still inherited a foreign type of education that was not suitable to the local needs. He further emphasised that the adopted system was alien, selective and elitist.

Since 1964, there has been a great deal of progress in the primary education sector in Malawi. Policies to improve access, quality and equity have been introduced and the process of reforming curriculum to meet the socio-economic needs of the country has been initiated.

One such policy introduced in 1994 by the Malawi government, was free primary education. The aims of the policy were to increase access, eliminate inequalities and build a strong socio-economic base, enhance civic education and increase the social and economic benefits of education at the community level (Malawi Ministry of Education and UNICEF, 1998). The implementation of this policy resulted into an enrolment increase of 2.9 million children in 1994/95 academic year from 1.9 million in 1993/94 (Malawi Ministry of Education and UNICEF, 1998). However, these children could not be accommodated in the available places in secondary schools eight years later since, according to the report from the morning news bulletin on the Malawi Broadcasting Corporation (MBC) radio 1 on June 27, 2002, there were 300,000 pupils in Standard 8 who were competing for 70,000 secondary school places in Malawi in that year. This translated to only 23 per cent of the Standard 8 students who were assured of going to secondary

school. One wonders then what had befallen the remaining 77 per cent and who was accountable for them? What skills did they have for them to survive in their communities?

These questions have led to the need to conduct this study in order to inform policy makers and educators on how primary education is serving rural communities in Malawi and also help them rethink how rural primary education should be reformed in order for it to be related to the needs of the rural communities. Therefore, the purpose of this study is to find out how primary education is related to rural communities in Malawi as one of the developing countries in Africa.

Research Questions

This study was designed to answer two main research questions.

1. How is primary education related to rural communities in Malawi?
2. What are teachers', students', primary school graduates', and craftspersons' perspectives on the appropriateness of primary education to the rural primary graduates' economic development and survival?

THEORETICAL FRAMEWORK

This study is guided by theories related to the interactive paradigm. In this paradigm, knowledge is viewed as socially constructed and educational policy is viewed as continuous processes of negotiations among stakeholders (Reimers and McGinn, 1997). According to Hartwell (1994, p.4), this paradigm describes the process of "participation, dialogue, and negotiations which lead to properly supported political decisions about education". In Hartwell's view, (1994, p.5) "an interactive, rather than simply a rational and technical approach, is essential when changes are sought in such areas as curriculum, the role of the teachers, ... and above all, examination and selection procedures". Furthermore, Coombs (1970) stipulated that the core of the interactive model is the notion that the world in which individuals live is created by themselves, and any understanding of the society, its institutions and social processes depend on the point of view of the participants in that society. Based on the assumption that knowledge is socially constructed, it is believed that through interaction of different stakeholders in education, knowledge about education can be developed, acquired and shared. Therefore this study focused on the views of participants in order to understand how primary education is related to the rural communities in Malawi. Their views were solicited through interviews and focus group discussions in order to get information that was grounded in the participants' experiences. This information was supplemented by classroom observations that were done in the participants' natural social setting.

SIGNIFICANCE OF THE STUDY

This study is significant in a number of ways. To begin with, as the government of Malawi is talking of reforming the current primary education curriculum, the results of this study may shed light on the areas that the curriculum designers should consider as they plan for the new curriculum. Secondly, the study may help the government to review the policy of examinable and non-examinable subjects in primary schools and the effects the policy has on these subjects. Thirdly, the study may reveal the educational needs of the rural community and help the Malawi government to formulate policies that will augur well with the needs of the rural communities. Finally, this study may help other educators in developing countries to learn from the experiences of Malawi as they develop and reform their education.

RESEARCH DESIGN AND METHODS

The overall approach that guided this study was a qualitative phenomenological design. This design was used to explore deeply into the experiences of teachers, students, primary graduates

and craftsmen about primary education and its relation to the needs of the students and communities in the rural areas. According to Rossman and Rallis (2003, p.97), in a phenomenological study, “the researcher seeks to understand the deep meaning of a person’s experiences and how she articulates these experiences”. The study therefore inquired into the participants’ understanding of their experiences with primary education as it relates to rural areas where the participants live. As said by Rossman and Rallis (2003, p.97), “those engaged in phenomenological research focus in-depth on the meaning of a particular aspect of experience, assuming that through dialogue and reflection the quintessential meaning of the experience will be revealed”. Even Merriam (1988, p.19) observed that “qualitative researchers are interested in meaning – how people make sense of their lives, what they experience, how they interpret these experiences, how they structure their social world”.

Population of Interest

The population of interest in the study consisted of rural primary school teachers, rural primary school students and graduates, and rural craftsmen. Note that because of lack of resources, the researcher could not access craftswomen who lived far away from where the researcher lived. However, the selected participants were studied in their schools and communities as their natural settings. They were purposively selected for the study. As put by Merriam (1988, p.48), purposive sampling entails the selection of a sample “from which one can learn the most to gain understanding and insight”. In addition, Stake (1995, p.4) asserted that one should select a sample “that can maximize what we can learn”.

The schools chosen were of similar characteristics in the sense that both were located in the rural areas, they were full primary schools (full primary schools in Malawi have classes from Standard 1 to Standard 8), were coeducational, were public schools and both used the same national curriculum. The only differences between the schools were that one was in a more remote rural area and also they were in different districts: one in Zomba and the other in Mangochi. However, the primary graduates who were selected were those who lived in the rural area and had gone through the curriculum that the students and teachers in school were using. Furthermore, the craftsmen that were chosen were all in the rural areas and had knowledge of the schools that were around them. I chose different participants with common attributes so that the results should be applicable to other rural schools and communities in Malawi and perhaps other developing countries though not strictly generalisable. According to Kennedy (1979, p.666), it is possible for a researcher to “describe several ‘common’ features of his (her) sample” if he or she wants the findings to apply to other situations.

The participants and classes selected in the schools were those from Standards 6, 7, and 8. I chose these classes because they were the most senior classes in primary schools where some of the skills obtained from the school were beginning to significantly emerge.

Data Collection

Data collection in this study was done through three qualitative methods: class observations, one to one interviews, and focus group interviews.

Observations

Class observation was the first qualitative method I used in order to have an overall impression of the setting and have some questions to be followed up in interviews. As observed by Emerson, Fretz and Shaw (1995, p.26), initial impressions “may include those things available to senses the tastes, smells, and sounds of the physical environment, the look and feel of the locale and people in it”. I observed 14 class lessons of 35 minutes each. According to Merriam (1988, p.88),

observations are important because “the observer gets to see things first hand and use his or her own knowledge and expertise in interpreting what is observed”. In addition, Rossman and Rallis (2003, p.194) support that “observation takes you inside the setting; it helps you discover complexity in social settings by being there”.

Field notes were taken in each class observation, and I had some time between the observations to reflect on and reorganise my field notes. As observed by Emerson, Fretz and Shaw (1995, p.19-20):

In some instances, the field researcher makes a brief written record of ... impressions by jotting down key words and phrases. Jottings translate to-be-remembered observations into writing on paper as quickly rendered scribbles about actions and dialogue. A word or two written at the moment or soon afterwards will jog the memory later in the day and enable the field worker to catch significant actions and to construct evocative descriptions of the scene.

It was through writing field notes that I turned my observations into data. Even Rossman and Rallis (2003, p.195) mentioned that as an observer you “need to turn what you see and hear (and perhaps smell and taste) into data ... you do this by writing field notes”. Furthermore, I was able to chat with teachers during break time to hear their sentiments on different issues that emerged during ‘general talk’. This ‘general talk’ enriched my interpretation of the data I gathered.

Interviews

The next data collection technique was conducting interviews. As considered by Rossman and Rallis (2003, p.180), interviews are “the hallmark of qualitative research”. According to them, in-depth interviewing takes the researcher into the participants’ worlds. In the Zomba district school, six teachers from Standards 6, 7 and 8 were interviewed (two from each class). Four were male and two female. In Malawi most of the primary teachers who teach senior classes are predominantly male so I could not get an equal number of female and male teachers for interviews. In the Mangochi district school, two teachers were interviewed and both were male. Since there were only three teachers at the school and one of them had gone home, I had no choice but to interview those who were available. These teachers in Mangochi had no specific class but taught all classes interchangeably. So in total eight teachers were interviewed and each interview took about one hour.

In addition to teachers, primary school graduates who lived in the rural area in Zomba were interviewed. I interviewed eight primary school graduates (four male and four female) and the interviews took about 40 to 60 minutes each depending on how much information the graduates were able to give. Moreover, two craftsmen were also interviewed. Craftsmen’s interviews took also about one hour each. They were interviewed on two separate days. Both lived in rural areas in Zomba district.

Focus Group

The third data collection technique was focus group interviewing. Focus groups were conducted with students. I chose to conduct focus group interviews with students rather than one to one interview because schools in Malawi are examination oriented and sometimes when you conduct one to one interview with students or administer a questionnaire to them, they think it is an examination and they become tensed up. I had similar experiences when I was assisting in collecting data for a doctoral student in Malawi and we had to emphasise to students over and over again that the process was not an examination. The other reason, which the headmaster of Zomba school also concurred with, was that primary students, especially girls, tend to be shy when conducting a one to one interview with a male researcher. So focus group was an

appropriate method that allowed students to speak freely and allow the interviewer to get reliable information.

I held three focus group discussions of four students each. In the Zomba school, I conducted two focus groups, which had two boys and two girls in each group. In Managochi, I conducted one focus group with three boys and one girl. I also conducted one focus group interview with a group of 10 craftsmen. Though I planned to interview them one by one, I could not because they worked in groups and they preferred to hold discussions as a group while they were working. I had to yield to their needs in order to get reliable data.

Before the interviews and focus groups took place, I had to prepare for them. Since I already had research questions, I prepared in advance open-ended structured questions for the interviews and focus group discussions. According to Fontana and Frey (1994, p.363), in structured questions, "all respondents receive the same set of questions". Even though my questions were structured, I allowed a lot of flexibility for more follow-up questions that would emerge and also I was prepared to modify my questions during the interview and group discussion process.

The language of discussions and interviews was mixed. Though the interviews and discussions took place primarily in Chichewa language, which is the local language of both the researcher and participants, there was a mixture of English and Chichewa in them. Most educated people in Malawi mix English and Chichewa when speaking in Chichewa. I therefore allowed the interviewees and discussants to express themselves freely in these two languages, so that they could say what they wanted to say without any hindrances.

Furthermore, I had a notebook that I used to write follow-up questions and areas to concentrate on in my subsequent interviews and discussions. According to Rossman and Rallis (2003, p.185), in follow-up questions, "you ask for more details, hoping to discover the deeper meanings and more concrete examples". So I used follow-up questions to ask for further elaborations and clarifications and also to suggest the focus of the next interviews and focus groups.

The interviews and discussions were tape recorded and transcribed verbatim without changing anything and later on translated into English. So most of the quotations that appear in this paper are translated from Chichewa.

Data Analysis

Data analysis in my study was a continuous activity that took place throughout the study; that is, from the time I started field work and wrote field notes, conducted interviews and focus group discussions, I became engaged in transcribing and translating the interviews and discussions. Throughout the process I had themes and insights emerging, which I recorded, and later, wrote small analytic memos. Rossman and Rallis (2003, p.271) argue that analysis is an ongoing operation, and that, "throughout a study you are describing, analysing, and interpreting data, although different activities may be more focused and instrumental at various times".

However, after I had finished translating the interview and discussion transcripts into English and had reorganised all my data, I read them over and over again and listened again to the tapes in order to familiarise myself with the data. As I was doing this, new insights, categories and themes were emerging which helped me to look critically at and revise my previous ideas. As stated by Rossman and Rallis (2003, p.281), this process of rereading and re-listening "enables you to become familiar in intimate ways with what you have learned".

At the end of re-reading and re-listening I had a number of themes, categories and insights that I was just writing down as they came. Then I started looking at them again to see if some themes and categories could be condensed and expressed as one major category or theme that could be

developed using the available data. This process helped me to come up with themes and categories that were encompassing and grounded in the available data.

After the categories and themes had been generated, I used them to code the data. The coding was done by hand on a hard copy. The interview and observation data were written in such a way that a wide margin was left at the far right end of the page where codes were written in line with the data on the page. As illustrated by Rossman and Rallis (2003, p.286), “in coding the data you will have to be clear about what words or phrases illustrate and elaborate each concept”. Each code for a theme or category had an arrow pointing at the supporting data on the page. Where there was a category, there was also a theme that went together with that particular category. Most of the categories in the analysis were indigenous though some were analyst-constructed. According to Rossman and Rallis (2003, p.282-83), “indigenous categories are those expressed by participants; the researcher discovers them through analysis” and “analyst-constructed categories” are those coming from the researcher which are identified through his or her experience with the topic or reading of related literature.

When all the data were organised either in the form of a concept map or in a table, I started telling a story, in a form of analytic memos, to see what each category said and how that was related to the whole theme and the research questions. These memos were shared with my colleagues for their comments. The comments opened more avenues for further interpretations. The story telling or narration was supported by the data and my own comments in order to interpret the meaning contained within them. As Patton (2002, p.480) stated, “interpretation means attaching significance to what was found, making sense of findings, offering explanations, drawing conclusions, extrapolating lessons, making inferences, considering meanings, and otherwise imposing order”.

Other Methodological Issues

There were also other methodological issues I considered to make sure that the study was well thought-out, ethical and strong. The first issue was the use of critical friends. Rossman and Rallis (2003) call them “communities of practice”. These were “small groups of peers working together to test out ideas, critique one another’s work, offer alternative conceptualisations, and provide both emotional and intellectual support” (Rossman and Rallis, 2003, p.xvi, preface). I learnt a lot from these critical friends and their comments strengthened and shaped the direction of the study.

The second issue was about triangulation. According to Rossman and Rallis (2003, p.66), triangulation entails drawing “from several data sources, methods, investigators or theories to inform the same question or issue”. In this study, data were collected from many sources using three qualitative research methods: interviews, focus group discussions and observations.

The third issue was gaining informed consent of the participants in my study. According to Punch (1994, p.90), participants in research have “the right to be informed that they are being researched and also about the nature of the research”. In my study I found that it was mandatory to gain informed consent from all my participants.

The fourth issue was about confidentiality. For the participants to provide valid information, they had to be assured of confidentiality. According to Rossman and Rallis (2003, p.74), confidentiality has “two elements: protecting their privacy (identities, names and specific roles) and holding in confidence what they share with you (not sharing with others using their names)”. Bulmer (1982, p.225) also argued that to protect privacy and identity of research participants, “identities, locations of individuals and places are concealed in published results, data collected are held in anonymised form and all data kept securely and confidential”.

The fifth issue was deception. As Punch (1994, p.91) put it, “although one may disguise identity to a certain extent, one should not break promises made to people”. So whatever I told the participants was honest and I avoided making false promises.

However, I should admit that the results of this study might have been influenced by my own values and beliefs that emanated from my position as a teacher, teacher trainer and rural community member in Malawi. As observed by Peshkin (1988, p.18) “subjectivity can be seen as virtuous, for it is the basis of researchers’ making a distinctive contribution, one that results from the unique configuration of their personal qualities joined to the data they have collected”. However, I had to monitor myself that I did not change the meaning of what I studied. As Peshkin (1988, p.18) experienced, “... to identify my subjectivity, I had to monitor myself to sense how I was feeling”.

RESULTS AND DISCUSSION

The purpose of this study was to find out how primary education is related to the rural communities in Malawi. Does primary education help children to acquire skills for them to be functional and survive in their rural communities? The study sought to answer two research questions: (a) how is primary education related to the rural community in Malawi? and (b) what are teachers’, students’, primary graduates’ and craftsmen’s perspectives on the appropriateness of primary education to the rural primary graduates’ economic development and survival? Therefore, the aim of this section is to present and discuss results.

School-Rural Community Relationship

In this part, I present participants’ perspectives on the issue of school-rural community relationship. Three sub-issues were identified and examined: (a) contribution of primary school to the community, (b) contribution of the community to primary school, and (c) the relationship between the rural environment and the formal school curriculum.

Contribution of Primary School to the Community

On the contribution of primary school to the community, the study has found that the school’s involvement in the community has been very minimal. For instance, when the teachers were asked to say how their schools became involved in the community, one of them was quick to say, “The school is not involved in many things”. Another also emphasised that the school was not involved much in what happens in the villages except “when there is a funeral near the school, it’s when we go with our students to participate in the funeral ceremony”. Even when students make things like brooms, hoe handles from their Creative Arts class; many teachers said that these products are rarely sold to the community. Instead, they were either kept in the storeroom or “displayed in the classroom at a science corner for children to see what they did”. Similarly, when students were asked to say how the community knew what they did at school, one of them said, “the community knows because we do our Creative Arts activities outside the school under the tree and when people are passing by, they see that we are doing something”. This response does not actually show the school’s active involvement in the community. Other students stated that their parents knew what they did at school because they took some of what they did home to show to parents. However, this was done on an individual basis and the products were shown to parents before they were finished. Once they were finished, the products were stored at school, hence denying the community access to them.

There were also three other reasons that teachers gave for not selling children’s products from Creative Arts to the community. The first reason was that the products were not durable because they used cheap materials to make them. The second one was that the products were not skilfully

made because students did not have enough skills to make them. This indicated that students did not acquire enough skills after school for them to survive and compete in the rural economy. The final reason, as said by one teacher, was that “when children make these things, we put them on display so that when school inspectors and advisors come, they should see that we are working”. It is only in Agriculture, however, that one student indicated that the community came to buy vegetables they grew at school. These scenarios show that the rural community does not benefit much from what children do at school and, as such, it is difficult for them to appreciate the contribution of the school to the rural community.

In addition, teachers indicated that they sometimes had ‘open days’ to display what they did at school to the community. However, when I asked the teachers how frequently they did this, they said that these events were not frequently done. For example, the interviews were conducted towards the end of the academic year but one of the teachers said, “this year we have not had any open day yet but we were supposed to have it”. Primary school graduates and craftsmen also indicated that they only had contact with the schools at the end of academic year “when schools display what they have been doing over the year for people to see”. However, one of them said, “sometimes schools do not hold these events so they do not show us what they do by the end of the year”.

Furthermore, some teachers indicated that they involved children in spreading messages about HIV/AIDS to the community through their “AIDS *Toto*” clubs. The word “*Toto*” is a Chichewa word, which means ‘rejection’ or ‘no’. As with other school contributions to the community, this activity also was not in operation at the school at present. For instance when one teacher was asked what the school contributed to the community, her response was, “this school to the local community, in the past it was involved in those AIDS *Toto* clubs”. The teacher’s response indicated that the school was no longer involved in the AIDS *Toto* club activities. This position was confirmed by another teacher who also said, “in the past there was a white man who was working at the Central Hospital who used to come here and we could meet in that church and share information about AIDS in the AIDS *Toto* club”. Craftsmen indicated that they heard much of the AIDS messages from the radio and also from the President of Malawi on political campaigns, but not from schools.

Finally, if the involvement of the school in the community was minimal, it was difficult for the school to know and identify what was needed in the community so that the school could incorporate these needs in the curriculum in order to make it relevant to the community. And again, as observed from the interviews, none of them mentioned that the school was involved in development activities in the community, for instance, identifying problems in the community and developing projects to address those problems while students learn from them. As such, the school was not fully involved in bringing development to the rural community.

Contribution of the Community to Primary School

The second issue is about the contribution of the community to primary school. Most interviewees said that the community was largely involved in the development work at the school. For instance, one teacher emphasised that:

There is a strong relationship between the school and the community. As you can see at this school there is a school block constructed out of grass. For this grassy school block to be here, it’s because of the community. Since we have too many children at this school, we asked parents to help us build this block. This grassy school block is from Standards 1 to 6. The community also comes to help us construct pit latrines. So the relationship is there and it is strong.

Other teachers also asserted that the community contributes to the development activities at the schools. For example, they indicated that the community moulded bricks, provided sand and water for construction, and provided labour in the actual construction of school blocks. Students also agreed that their parents contributed to the school activities by doing what the PTAs (Parents and Teachers Associations) and the school committees asked them to do for the school. For instance one student proudly said, “my parents are part of this school because they helped to build that school block by bringing in sand and water. They also tell me to take care of this building because they suffered when erecting it”. Another stated that her parents agreed with other parents and teachers during PTA meetings to build toilets for the school and she had seen them many times going to school to work on that project. Primary graduates also indicated that the community was involved “in terms of school development. Parents help to construct school buildings”. Some of the craftsmen interviewed were also parents who indicated that they had been involved in providing labour to construct school buildings.

One teacher further stated, “the people who are around this school act as the eyes of this school. They provide security to this school”. The teacher indicated that if people saw strangers around the school, they reported either to the headmaster or the village headman. In so doing, they acted as security people to protect the school. However, many interviewees iterated that the community’s contribution to the school was never in cash because most of the people in the rural area were poor.

In addition, many interviewees said that the community was involved through Parents and Teachers Associations (PTAs) and the school committee to solve problems created by students. As one teacher stated, “if we see that we have problem children, we convene a PTA meeting to discuss with parents what we can do with such children”. And another said, “the school and parents meet frequently through PTA and school committee to discuss the problems that teachers and students meet, especially late coming of students to school”. Some teachers expressed the feeling that without involving the community where children come from, they cannot manage to mould the character of children they teach. As one of the teachers stated, “children live with their parents and it’s their parents who understand them better. So if we do not involve them when children are troublesome, we are fighting a losing game”. However, none of the students mentioned this role of the community through PTAs, maybe because these meetings were held in private in order to discuss them. Similarly, none of the craftsmen was either a member of a PTA or school committee so they said nothing on this issue.

Apart from solving children’s problems, teachers said that the school committee and PTAs were involved in encouraging children to continue with school and also spread messages about HIV/AIDS. For instance, in answering the question on how the school was related to the local community, one teacher stated, “many times the local community comes here to do something, for example to tell children not to leave school or about AIDS”. One of the graduates also expressed that the community became involved in school affairs “because they encourage their children to go to school”. Therefore, through PTAs and school committees, the community became involved in many activities in the school.

Furthermore, the school used resource persons from the community to teach students topics that were found both in the curriculum and the community. This was mainly done in Agriculture where students had field trips to the community to learn about a topic in the curriculum. As put by one teacher, “for example in Standard 8, there is a topic known as fishpond. Sometimes we take children on a field trip to see a fishpond. The community is involved because the children are able to ask the owner of the fishpond questions”. Students also stated that teachers sometimes involved resource persons from the community to teach them. They said, “Sometimes we go to the farmers to teach us how they raise their animals and grow their crops in their farms”. However, the

community resource person only taught what was prescribed in the curriculum, nothing outside it. For instance the teacher said, “sometimes there might be a topic that I am not conversant with in the curriculum, so you take a person from the community who knows the topic as a resource person and bring him/her to teach children that topic”. Even though teachers and students mentioned that they used resource persons, none of the craftsmen had indicated that he had ever been invited to share his skills with students.

Teachers also expressed that children taught their friends and other teachers what they learnt at home from their parents, especially in the practical subjects. For instance one teacher stated, “there are some children who teach teachers because they learned these skills at home. So the connection is that what they have seen at home is not difficult to implement here”. Some students also indicated that they taught their friends some skills during creative arts. When asked where they learned these skills, it was interesting to note that most of them said they learned from their grandparents, not their parents. For instance one of them said, “for example, I know how to make clay pots. I learned this skill because I usually go to my grandmother during holidays. She makes clay pots so I learn from her”. Another said, “my grandmother makes clay pots so when she keeps her clay, I steal some and make a small pot. This is how I learned how to make pots”. So the question of why grandparents were involved more in some practical work like pottery than parents would need further investigation. However, the teachers indicated that there were only a few children who had skills to contribute to others in school so it was mandatory for a teacher to be well versed in the skills that should be imparted to children.

Interpreting what the interviewees had said, it is clear that there is more community involvement in the school than involvement of the school in the community.

However, even though the community strongly participates in school affairs, it does not influence the formal school curriculum. As one teacher put it, “the community does not take part in Agriculture. If they take part, maybe because we ask children to bring materials to use in this subject. But the community does not come to see what we do”. When students were asked how the community participated in what they learnt, they gave similar responses. One of them said, “for example my parents allow me to take things like hoes to use at school and in so doing they participate in what we learn”. The students, however, did not indicate if their parents did have a say in what they learnt. Although the rural community was agriculturally based, teachers felt that the community could not influence what was taught because the curriculum was already fixed. As emphasised by another teacher, “teaching is just for teachers, not for the community because the curriculum is already outlined”. If teachers had to involve a resource person from the community, they had to see to it that he or she was covering what was outlined in the syllabus. And according to teachers, they only involved a resource person from the community if they felt they did not have sufficient expertise in the topic as found in the curriculum. However, not all rural communities were the same in Malawi. So if the teachers’ aim was to only teach what was in the curriculum, it meant that the school might not address pertinent issues that were found in the community since they were not in the curriculum.

Similarly, students indicated that the community was not involved in matters pertaining to the curriculum. However, they had mixed feelings as to whether the community should have a say in what they learnt. For example one of them said, “the community should not have a say because what we do here is for our education and it’s none of their concern”. Other students felt that because most of the people in the rural area were not educated, they should not have a say in what they learnt. To them, uneducated people “are ignorant of what should be taught at school and if they are asked to contribute, their contribution will lower standards of our education”. Nevertheless, some students had different feelings about the community’s involvement in what they learnt. For example, one student said, “yes, the community must have a say in what we learn

because these people do not just stay at home but are also involved in the activities like agriculture and they do also have knowledge. They know some things that they can help us to know". Another student said that the community should be allowed to have a say in what they learnt because "they might have some ideas that can help us". When the primary graduates were asked whether the community should have a say in what is taught at school, they all agreed that they should. They gave different reasons for their stand. One of them said that if the community was involved in what the children learnt, "they will know what knowledge their children are getting and they will be able to help the children at home". The other graduate stated, "there are some things parents want the school to teach their children so if they are involved they will be able to tell the teachers what they want their children to learn". Another graduate said that the community should be involved because "if there are some things that do not work well, the community will be free to contribute their ideas". All craftsmen also indicated that they wanted to participate in what was taught in schools because their skills would gain recognition in schools. "If we participate we will pressurise teachers to teach these skills to children so that we are known both in schools and the country" explained one of them. These mixed feelings show the need for students, teachers and the community to understand clearly the importance of community participation in education.

However, even though the community participates in the school development activities, lack of community involvement in the curriculum entails failure to tap into the local knowledge that could be used to enrich the school curriculum and make it more meaningful to the students.

Rural Environment and the Formal School Curriculum

The third issue is the relationship between the rural environment and the formal school curriculum. According to the interviewees, subjects that are in the primary school curriculum from Standards 1 to 8 are: Agriculture, Chichewa, Social Studies, Mathematics, English, Science, Creative Arts, Needle Craft, Music, Home Economics, Physical Education, Life Skills and Religious Education. These subjects are divided into two major categories: academic (consisting of the first six) and practical (consisting of the last six and Agriculture, except Religious Education and Life Skills which interviewees failed to find their place in the two categories). It should be noted that Agriculture falls into both categories. Teachers use syllabuses and teachers' guides that were prepared in advance for them to teach these subjects.

When the interviewees were asked to name the subjects that they thought were very important for children to function and survive in the rural area, they all agreed that those that fell into the practical category were the most important. The first subject to be mentioned was Agriculture. Agriculture is categorised as being both academic and practical. The participants said that in Agriculture children could learn how to grow different crops for food and sale to earn money and also how to take care of animals and their environment. They also said that in Agriculture, children learnt budgeting that could help them do business. For instance one of the teachers stated, "Here in the village, the subject that can help a child to survive is Agriculture. If a child stops at Standard 8, he or she can go to the 'dambo' land and grow some vegetables like cabbage and sell". Students also echoed the same sentiments. For instance, one of them stated, "I myself see that Agriculture is very helpful because if I am not selected (to secondary school) I can go home and grow vegetables by following what I have learnt here and make money". Another also said, "Agriculture can help me to know many things and even if I fail to go to secondary school I can get money and support myself through selling farm products".

The importance of Agriculture was also seen in the graduates' interviews. When asked what they were doing having finished primary school, they all indicated that they were farming. However, they differed in their perceptions of farming as work. Most of them felt farming was not work because everybody in the village did it whether they wanted to or not and, as they learnt this from parents, they did not see the role of education in it. For example one of them said, "even if I did

not go to school, I would be able to do what I am doing because anybody, even those who have never gone to school, can do gardening". When asked what work they did, another graduate said, "I am just staying. I am not doing anything". However, when asked if he had a garden, he indicated, "I only do farming in my garden but I do not work". The other graduate said, after being asked what work she was doing, "I do not work, I am just staying. I just go to my garden". So most of the graduates indicated that they did not work even though they did farming in their gardens.

I think it is important that the school should help children realise that farming is one type of self-employment. In addition, the school needs to see to it that they inculcate effective agricultural skills in the students so that when they go home they should be able to make a difference.

Nevertheless, some few graduates that were interviewed indicated that they worked because they did farming in their gardens. For instance one of them said, "I work as a local farmer". He also indicated that what he did in his garden was related to what he had learnt at school. Another graduate also said that she worked as a farmer, growing tomatoes, cabbage and onions. Like the previous graduate, she indicated that what she did in her garden was related to what she learnt at school. She said that before she went to school, she did not know how to apply fertiliser to her vegetables. "I used to spread fertiliser on my turnips and most of them were drying up. But, I learned to dig holes besides my plants and apply fertiliser. My vegetables do not dry any more," she proudly explained.

In Creative Arts, interviewees said there were many things children could do in this subject that would help them stand on their own even if they failed to go to secondary school. According to one of the teachers, "in Creative Arts, a child can weave baskets, mats, brooms, make mortars, pestles, that are greatly needed and used in the villages and sell them to make money". Some teachers and students talked of painting, carpentry, making cane furniture, pottery and making woodcarvings as important skills in the villages, which were also part of Creative Arts. Surprisingly, none of the graduates who were interviewed indicated that they were involved in any of the Creative Arts skills as a result of going to school. Of the craftsmen I interviewed, none of them indicated that they learned their skills from school. How Creative Arts is being taught in schools is therefore questionable.

In Needle Craft, interviewees said that in the villages people were poor and they did not throw away clothes because they were torn. They always needed a tailor to mend their clothes. "It is cheaper for people in the village to get their clothes mended than buy new ones," one of the teachers argued. So Needle Craft would help children become tailors and get money by mending clothes for the people in the village. Students also said Needle Craft could help them make clothes to sell to the community. Among the graduates and craftsmen I interviewed, no one was a tailor so it is not known if there are some who are using skills learned in Needle Craft at school. This question can be followed up in further investigations.

Referring to the music business that is developing in Malawi, some participants indicated that the subject of Music could also help children to be self-employed. One of the teachers said, "there is a lot of money in the music business now. Many people now a days like Malawian music regardless of whether one is in the village or not. So this subject can give children a fertile ground for making money". Students also mentioned some of the great musicians in Malawi who were making a lot of money. They mentioned that if they knew music, it could make them rich.

Turning to Home Economics, some participants said that during famine they saw many people buying doughnuts and other homemade foods to eat. So if children learnt Home Economics, they could know how to provide and prepare nutritious food economically for their families and for sale. "Even here at school, you will see that the people who sell cooked food that our students buy come from the surrounding villages. If they learnt Home Economics, they would be preparing

healthy and nutritious food for our children here,” said one of the teachers. Another teacher also felt that, “these practical subjects are very important for children if they fail to go to secondary school. They can survive in the villages by learning these subjects instead of these academic ones”. So practical subjects were generally earmarked as most important for the functioning and survival of those rural children who could not make it to secondary school. Nevertheless, it should be noted that, by saying practical subjects were most important for rural living, participants did not imply that academic subjects were totally useless. For instance they also mentioned mathematics as important for those who would be selling their products because they would “be able to give proper change to the customers”. So academic subjects are like supporting subjects to those with rural skills who do not go to secondary school.

Having identified subjects in the curriculum and earmarked those that are most important for the rural community, there are some flaws that have been observed. For instance, teachers were concerned that the way the topics in the curriculum were ordered, there was a mismatch between what was taught and the season in which it was supposed to be taught. For instance in Agriculture, some topics that were supposed to be taught in a certain season, such as the rainy season, were taught in the dry season. One teacher complained:

According to me, since the change of the school calendar and that first term should now be beginning in January, I think there is no agreement between the seasons and the order the topics are taught in the syllabus. Take for example in Agriculture, sometimes we teach things after their seasons have already gone. In the past when schools were closing in July for a long holiday, topics were matching with the seasons.

The teachers felt that children learnt better when they saw and experience what they learnt but if they learnt things off-season, it was difficult for them to make sense of what they learnt. As such, they failed to acquire adequate skills in the subject taught. The problem of teaching some topics off-season was a result of the inflexibility of the curriculum. Teachers were not free to teach what they felt was appropriate according to time and setting. For example, when teachers were asked if they could divert from the curriculum and teach what they felt was important for the children to survive in the rural community, one of them said, “we follow the syllabus in the way it was written and we teach everything that is in the syllabus”. Answering the same question, another teacher proceeded and said:

Aaah! The syllabus that we are using now does not allow us to use our own knowledge in relation to what the children need to survive in the rural area because we have people who inspect us. What these people want to see is what is in the syllabus. So if we divert from the syllabus we are guilty of breaking the rules. The syllabus gives us a boundary of the work we do. As such it is difficult for us to do something different because the inspectors/advisors will think that we are not using the syllabus.

The other mismatch was about the classroom method of teaching and the rural culture. The culture in the rural community in Malawi is a collective one and people live as a group but the classroom methods promote individualism. Of all the classes I observed, no teacher used collaborative methods like group work, pair work or role-play. In all the classes teachers gave students individual class exercises and discouraged them from collaborating. For example, in one of the Agriculture classes, students were given a task of drawing types of fish individually and the teacher discouraged them from talking to each other. To those who were talking, the teacher retorted, “Do you draw with your hands or mouth? Why are you talking?” And again in the Mathematics class, when the teacher gave the students an exercise, he commanded, “Answer these questions quietly. I do not want to hear any noise apart from that from the papers and breathing”.

In addition, in some classes, teachers did not make much effort to relate whatever they taught to what students experienced in their local environment. For example in one of the Health Science

classes, a teacher was teaching about HIV/AIDS but her approach was more theoretical than experiential. For instance, she did not ask students to say if they ever had a friend, a relative or somebody they knew in their community who suffered from or died of HIV/AIDS. She did not ask students to explain from their experience how, for example, a person with AIDS looked or how people took care of HIV/AIDS patients in their community. One student was curious and wanted to know if mosquitoes could spread HIV/AIDS but the teacher just said “no” without any explanation and the student looked dissatisfied. The student was concerned about mosquitoes and HIV because these were found in his community and the school was supposed to address his question adequately to deal with any fears that he had. The teacher taught this subject as if there were no people living with HIV/AIDS in the community where students came from. She glued herself to the book and read out whatever was in the book regardless of whether it was making sense to the students or not. However, towards the end of the lesson, when students were given a chance to ask questions, they asked so many questions related to the conditions in their community. This showed that in her talk, the teacher could not adequately address what students wanted to know about HIV/AIDS in order to solve their own everyday problems. Thankfully she gave them time to ask questions. The other useful thing that the teacher did at the end was to ask students to say the effects of HIV/AIDS if it attacks teachers, parents, students and so on. However, the teacher seemed to run away from addressing the issue directly. That is to say, instead of asking direct questions of what AIDS is doing in the community, the teacher asked future conditional questions like, “what will happen if ...?”

A similar problem was observed in one of the English classes. In this class, the teacher was teaching about passive voice but instead of giving students sentences that reflected what was in their own environment, he used some sentences that were far removed from the students' experiences. For example, one of the sentences that the teacher gave for the students to change from active to passive voice was “Madalo crossed the ocean”. However, there is no ocean in the community, let alone in the country as a whole, for students to understand the verb “cross” in relation to the ocean. Even though there were so many rivers in the district, the teacher chose to use ocean because it was in the syllabus. This mismatch would not yield functional literacy in the children.

In short, the existing mismatches between the formal curriculum and the environment in the areas discussed may result into making education less meaningful to the students. As such, it is doubtful if students acquire the intended skills as articulated in the goals and objectives of the primary education plan.

Devaluing Practical and Rural Community Oriented Education

The other main issue that was identified from the interviewees was that there was a tendency to devalue practical and rural community oriented education in schools. Under this issue, there were three sub-issues that were learned: (a) examinable and non-examinable subjects, (b) teachers' skills in practical and rural oriented subjects, and (c) lack of teaching and learning equipment and material in the practical subjects.

Examinable and Non-examinable Subjects

Even though interviewees identified subjects that belonged to the practical category as very important for children to survive in the rural area if they failed to go to secondary school, they also all agreed that teachers and students neither had interest nor worked hard in them because practical subjects were not examined in the national examinations at the end of primary level. For instance, when one teacher was asked why practical subjects were ignored in schools, he said, “Sometimes the syllabus can show practical work but teachers are not interested to follow this. Since practical subjects are not examinable, even if we work hard how will it benefit us?” This

teacher felt that if the government put a policy that practical subjects should be examined, the practical curriculum would be strengthened and teachers would work hard to impart skills to the children. He saw the problem of devaluing practical subjects as emanating from both the government and the teachers. Another teacher also said that children did not acquire real practical skills after primary school because at school:

These children are encouraged to work hard in the subjects that come in the examinations because they know, even when they are in lower classes, that there will be examinations in Standard 8. So teachers are not interested in the subjects that do not come during examinations, if they teach them, their teaching is different from those subjects that come during examinations. So children do not have enough time to develop skills in practical subjects to use at home because most of the time is spent dealing with subjects that they will write during examinations.

In support, another teacher stated that even though practical subjects were scheduled in the timetable, “We use that time to teach subjects like English so that children should pass during examinations. Children are also not interested in practical subjects because they will not write them in examinations”. The use of practical subjects’ time to teach other examinable subjects was also confirmed during my class observations. The class I observed in Standard 6, the teacher used a Needle Work period to teach English. Although I was curious to observe a Needle Work class, I ended up observing an English class. Students also indicated that teachers use class periods for practical subjects to teach subjects that would be examined at the national examinations. Nevertheless, one teacher said that if all the teachers were doing the same things and worked hard in subjects like Creative Arts and Needle Craft, children would be helped to be self reliant after school but “since the government said these subjects should not be examined, people are not interested to work hard in them”.

Interestingly, Agriculture in primary school was divided into theory and practice and it was only the theory part that was examinable while the practical part, which was also very important for rural living, was not. Consequently, interviewees observed that this practical part also suffered because, as said by one of them, “it is only the theory part that is examined. If they want to examine the practical part, they examine it like theory referring to what students had already done in the past. But the emphasis is on theory”. When asked whether primary education helped students to attain self reliant skills, one teacher said that in the past “in Agriculture, there was a special lesson for practical and the child was able to make a vegetable garden at home from these practical lessons. They were also able to prepare a garden and grow crops and take care of them but now practical work is not strengthened in Agriculture”. This was an Agriculture teacher and he emphasised that in many schools there were no vegetable gardens “because this present curriculum is not strengthened so that children should be able to do practical subjects”. This was also confirmed in the school in Mangochi. Although the school was in a remote rural area where the community depended largely on Agriculture, there was no school garden for Agriculture.

The emphasis on theory in primary school was very alarming. One of the class lessons I observed was a Standard 7 Agriculture lesson. In this lesson, the teacher was teaching about types of fish. Although there was a fish market near the school, the teacher just relied on the drawings of fish to teach this lesson instead of bringing real fish to class for children to identify and classify practically. Another class was Mathematics. The teacher was teaching about “Addition of Lengths and Width”. Though it was possible for him to teach this practically, the teaching was so theoretical. There was no tape measure or ruler for students to measure, for example, the length and breadth of their own classroom or desks and add them up so that the children would see the relevance of mathematics to their everyday practical living. The emphasis was on competition, “finish quickly and have your exercise marked”. The other class was a History class. In this class,

the teacher was teaching about the missionaries and their influences. Just in front of the school, there was a church but she never let pupils discuss this church and the influence it had in the community as one of the real examples of the influence that the missionaries had had in Malawi. In fact, for the school to be where it was, it was because of that church. The school started as a missionary school.

For those teachers who mentioned that they did some practical activities in Agriculture, the common activity mentioned was the making of a vegetable garden. This was also confirmed in the students' interviews. Those who mentioned that Agriculture had helped them said they were able to make a vegetable garden. However, Malawi's staple food comes from maize but none of the teachers or students mentioned that students learned how to prepare maize gardens at school.

The teachers noted that since it was the government that stipulated that practical subjects should not be examined, it meant that the government had seen that they had no value. For example one of the teachers stated that they worked hard in examinable subjects because what they were fighting for was that children should do well in examinations. She continued to say that if Creative Arts was "examinable there would be no problem, it would be treated like these other subjects but if the government says this should not be examinable, it shows to us that the subject is useless". The teacher recommended that the government should treat those subjects that appeared to be useless as being useful. "For example, if a child fails to excel in Mathematics but he/she is good in painting, that skill must be encouraged. But how can he/she be encouraged if he/she knows that what he/she is doing is not valued?" she questioned.

While practical subjects received less emphasis in lower classes, in Standard 8, which was the last class in primary school, they were not even taught though the curriculum showed that they should be taught up to Standard 8. Students and teachers in this class busied themselves with examinable subjects in preparation for the final national primary school leaving certificate examinations. For instance, one teacher said "teaching practical subjects in Standard 8 is wasting time because children prepare for examinations and practical subjects do not come during exams. So we do not teach these in Standard 8". However, Standard 8 was a crucial year for students to acquire enough skills to survive in the rural areas. For instance one teacher said that it was in the higher classes "where we deal with complex practical skills more than in the lower classes". So if practical skills are not taught in the higher classes, students are not able to develop these complex skills for them to compete in the rural economy.

Even though practical subjects were not taught in Standard 8, students voiced their concerns about them. Students felt that they were not helped enough if they were denied practical subjects at Standard 8. According to them, practical subjects would help them survive in the future if they failed to go to secondary school. For instance one of them said, "I was thinking that, if, in the senior classes, they gave us subjects like Creative Arts, Needle Craft, Home Economics, and the like we would be helped to get money after we leave school in Standard 8". When they were asked to say what they thought would be important for them to learn up to Standard 8 so that they survived in their rural areas, most of them still indicated Agriculture and practical subjects. Therefore, ignoring practical skills at this level is giving students false hopes as if everybody will go to secondary school and later on get white-collar jobs.

In summary, by making some subjects examinable and others not, it gives an impression that it is only those subjects that are examinable that are important. This makes those who fail to go to secondary school suffer twice, that is failing to go to secondary school and at the same time failing to acquire skills for them to survive in their own communities.

Teachers' Skills in Practical and Rural Oriented Subjects

Despite the many practical subjects introduced in the curriculum and despite the fact that they were very important in the rural areas, this study has shown that most teachers did not have adequate skills to teach these subjects. When asked if teachers had enough skills to teach practical subjects like music, one teacher responded,

The problem begins in the Teacher Training Colleges (TTCs). In TTCs the teacher was not adequately taught music, he/she comes to school, he/she is given a teachers' guide, 'teach music,' example tonic solfa, do you think he/she can teach? He/she cannot teach because he/she does not know what notes are. Even at this school, there is nobody who has skills in music.

This teacher felt that if the government put interest in practical subjects and started sending teachers for either orientation or in-service training, it would be helpful for them to teach practical subjects and even children would start liking practical subjects such as music. Another teacher elaborated that when children finished primary school, they did not use the skills at home because they were not well taught in school. He said that there was a lack of interest in the teachers, government and TTCs to promote these subjects. He further said, "Even in college, tutors do not teach us well practical subjects like Creative Arts. So we come here without any skills to teach the children. As a result, we skip what we do not know". He felt that the problems that were faced in practical subjects come from far away and from the government, to the TTCs, to teachers and finally to the students. In agreement, another teacher lamented, "The government puts subjects in the syllabus that teachers should teach them but without training teachers in those subjects. We have not been trained to teach Creative Arts. Of course there are some things we can teach but we do not have skills in most of the things we are asked to teach in Creative Arts".

For those teachers who said they had some skills in practical subjects, they indicated that they learnt them at home but not in college. For example one teacher said she has skills in music because she had been singing in her church choir and their church emphasised use of tonic solfa. In that way, she learned how to read music. Another said, "I learned how to make wood carvings when I was young so I still use those skills to teach my students". These teachers stated that they sometimes asked fellow teachers to teach those skills they did not have. However, they agreed that many teachers did not have skills in practical subjects.

Therefore, even though there were practical subjects in schools, children did not adequately learn them and acquire enough skills for them to survive in the rural area because their teachers were also incompetent in practical subjects.

Lack of Teaching and Learning Equipment and Materials in Practical Subjects

Even if teachers had skills, it would still be difficult for them to teach practical subjects because of lack of teaching and learning materials in these subjects. As observed by teachers, the government did not provide learning and teaching equipment and materials for practical subjects. For example, when asked what problems they faced in teaching practical subjects, one teacher said,

We do face a lot of problems. Let's say, for example in Standard 6, they say we should make a baby blanket but we need thread to do that. I cannot manage to sponsor the whole class to buy thread. Sometimes we tell children to buy thread but they do not manage because they are poor. For example last week we told them to contribute K35 (about \$0.41) each to buy thread, but some children are failing to contribute because they do not have money.

This teacher said the problem was that children and teachers could not manage to buy materials from their own pocket for practical work. In Malawi, teachers' salaries were very low; this teacher

questioned why she was expected to buy materials for the students if she was not receiving enough herself. She said that, if the government was providing materials, it would be easy for her to teach the class, but expecting students to buy materials was not possible. As a result, teachers ended up either buying materials themselves from their low salaries, which was not a healthy situation for them, or cancel the topic altogether.

In both schools where the study was conducted, Home Economics was not being taught. When asked if Home Economics was being taught in the Zomba school, one of the teachers indicated that it was not because “the major problem is lack of equipment and teachers who teach this subject”. In the Mangochi school, the teacher was so passionate and said:

We do not teach this subject at our school. There are reasons. Our school is from Standards 1 to 8 and in Mangochi there are not enough teachers. We are failing to get teachers for our school. We are only three teachers. So for us to teach from Standards 1 to 8 and also teach in the way we were supposed to teach, it is difficult. We really need this subject at our school because it can help children to be employed as cooks. But we do not teach it because we do have a lot of work and we also do not have materials.

Even though Home Economics is very important in the villages for issues of nutrition, general home cleanliness, balanced diet and so on, the rural community is denied the opportunity to have it in their schools.

Even though the study has shown that what was taught in Agriculture related well to what children needed in the villages, some practical activities were not conducted because of lack of equipment and money. When asked if what was taught in Agriculture was related to what students needed at home, one teacher said most of the things were related but “the problem is that sometimes the syllabus shows that we should take children for a field trip but if it is far, we fail to go because we do not have money to hire transport. And again, we fail to get teaching materials for practical work”. This teacher felt that if they had materials available, children would be real agriculturalists because they would learn all the necessary skills. “But the problem is that we lack enough materials. Even for us to get fertiliser it depends on our initiative but we do not have enough money to continue doing that”. The issue of using teachers’ money to buy teaching materials is also mentioned here.

As observed, lack of materials and equipment to teach practical subjects is a very big problem in the rural schools. The consequence of this is that teachers and students think that the government’s message about practical subjects is that they are useless. This results in denying the rural student opportunities to function in his or her community

Participation in Curriculum Development

Another issue that emerged in the study was that teachers felt that they were not involved in curriculum development. They said the curriculum they were using was developed by authorities, higher in both academic qualifications and status, and was passed down to them to implement as gospel though they did not understand some of the issues in it. For instance one teacher said, “the problem with this syllabus is that those who developed it followed a ‘Top-Down Approach’ so it is difficult for us to divert from it. As a result, we just follow what is in it. We cannot do otherwise with it since the authorities had already prescribed it”. This teacher said, even if they followed the curriculum as prescribed, the children did not do well because some of the things did not relate well with the needs of the children. She gave an example of Standard 6 English. She said there are too many activities in Standard 6 English to be completed in a very short period of time; this did not match well with the performance of the children at this level. According to her observation, the English syllabus was developed as if the students to be taught were “native speakers of English”. She suggested that if the curriculum development followed a “Down-Up

Approach”, these problems would be eradicated because, according to her, “it is us who know the problems of these children and how different they are. So our plea is that we should be involved in the development of the curriculum because it is us who face students’ problems”. Another teacher articulated the same problem of too many activities and too little time and what he said was that “when teaching we rush through just to complete the activities regardless of whether the students have understood the materials or not”. This scenario is another manifestation of a rigid curriculum that does not allow teachers the freedom to diverge from it. And again, it manifests lack of training of teachers to assess the materials that are important to teach and those that are not important.

Similarly, students indicated that they wanted to be involved in curriculum development. As stated by one, “we want the government to ask us what we want to learn at school. Sometimes there are other things we desire to learn but they are not included in the syllabus”. Another student complained that, even when they asked their teachers to teach something they wanted to learn, the teachers told them “what you have asked to learn is not either in the syllabus or at your level. You will learn it when you go to secondary school”. I felt this to be an insult to students because it was only about 23 per cent of the Standard 8 students who went on to secondary school.

In summary, if teachers and students were not involved in the development of curriculum, it was difficult for such a curriculum to be successfully implemented and to respond to the needs of the students as has been shown by both teachers and students in this study.

CONCLUSIONS AND RECOMMENDATIONS

The question that the study was trying to answer was how primary education was related to the rural communities in Malawi. This overall question was explored through two specific research questions: (a) how is primary education related to the rural communities in Malawi? (b) What are teachers’, students’, graduates’, and craftspersons’ perspectives on the appropriateness of primary education to rural primary graduates’ economic development and survival? The overall approach used to collect data in order to answer these questions was a qualitative phenomenological design.

There are a number of issues that the study finds that explain how primary education is related to rural communities in Malawi. To begin with, the results suggest that the schools that were studied indicated a very minimal involvement in the community. Because of this minimal involvement, it is difficult for the community to appreciate the contribution of the school to their lives since they do not benefit much from it. It is also difficult for the school to know and identify what is needed in the community so that the school can incorporate those needs in the curriculum, thereby making education relevant to the community that the school serves. As such, the school is not fully utilised to bring development to the rural community.

In addition, the study finds that the local community is strongly involved in certain school activities, which include doing development work at school, solving problems for students, and providing security to the schools. However, even though the community strongly participates in school affairs, it does not influence the formal curriculum. This is a problem because, if the community is not involved in the curriculum, the school is failing to tap the local knowledge that could be used to enrich the school curriculum and make it meaningful to the students.

Furthermore, the results have shown that there are some mismatches between the rural environment and the school curriculum. These mismatches are found both in the curriculum as stated by teachers and methodology as revealed in the class observations. These mismatches may affect how students learn and may hinder the acquisition of functional skills that are useful for the students to survive in their local communities.

Moreover, it is found that the policy of selecting some subjects to be examinable while others are not, militates against the acquisition of skills in those subjects that are not examinable. Consequently, the majority of the students who return to rural areas after completing primary education are not taught the subjects that are important for their survival in their rural communities.

Another issue that emerges is the lack of teacher and student participation in curriculum development. This has implications for curriculum implementation and relevance. If teachers are not involved in the development of the curriculum, they do not have the chance to indicate if they are able to handle its content in relation to their aptitude and the level of the children they teach. And again, if students do not participate, their needs may be overlooked in the curriculum.

Recommendations

Role of the School

Schools should increase their involvement in the community especially in the community development activities that should be connected to students' learning. Students and teachers should be able to identify activities in the community that can be incorporated in the curriculum so that as students get experiential learning, they should also develop the communities together with the members of their communities. The Malawi government, through the Ministry of Education, should take a deliberate step to facilitate this kind of involvement by turning this idea into one of the policies for rural primary schools.

Curriculum Issues

The curriculum should be revised so that instead of being prescriptive, it should be descriptive and flexible to allow teachers to be creative and venture into areas that are important for the local communities in the rural areas though those areas might not be prescribed in the curriculum.

It is also found that some teachers take the curriculum as gospel because they want to impress the inspectors and advisors that they are covering what has been prescribed. Therefore, in order to help teachers to be creative, inspectors must emphasise the need to see how the teachers adapt the curriculum to the local environment instead of checking if what they are teaching is in the curriculum. Teachers must be flexible to teach what they feel will help the children to survive in their local communities and, at the same time, acquire academic skills that may enable them to continue with education. So issues of training and supervision, if well organised, are two interrelated aspects of making a teacher more of a think-tank in curriculum implementation.

Community, teacher and student participation in defining and developing the school curriculum must always be sought in order to make the curriculum relevant, implementable and responsive to the local needs.

Teacher Training

As the class observations and interviews show, teachers lack creativity to contextualise the curriculum or modify it. They think whatever is in the curriculum must be presented as it is without reflecting on how what they teach is related to the local environment. So teachers must be trained to be creative and they must consider what is around them to be very important for the learning of the students. This means that teachers colleges and in-service programs for teachers must impart in teachers skills that can help them facilitate experiential learning.

Furthermore, teachers should be trained or oriented on how to teach practical subjects. This can take a form of in-service training for the teachers who are already in the field, whether they are already qualified or not. In addition, teachers colleges should recognise that there are practical

subjects in the primary curriculum and, as such, similar skill subjects should be included in the teachers college curriculum to address the lack of competent teachers in these subjects.

Policy Issues

The policies of examinable and non-examinable subjects need to be revised in order to avoid giving an impression that some subjects are not as important as others. For instance, instead of saying that practical subjects should not be examinable, continuous assessment may be introduced to assess practical skills through portfolios. Teachers should be trained to assess the progress of children in these subjects and their progress report be kept until they reach Standard 8. In Standard 8, an outside assessor should come in and, together with the teachers, assess the portfolios and products of students' work and arrive at grades that should be sent to Malawi National Examination Board (MANEB). These grades should be combined with the students' grades in academic subjects to determine their final grades.

Policies should be formulated that will enable skilled people in the local communities to be formally incorporated in the primary education system so that they work with teachers to impart skills that are necessary for the rural children to survive in their communities even if they fail to go on to secondary school. Through the model of school-based enterprise for example, these skilled persons, together with students and teachers, can be making some products to sell to the community so that the money realised can be used to buy more materials for the school and pay those skilled workers. The Ministry of Education can help initiate this process by funding its initial organisation and thereafter, encourage the schools to operate with little financial support from the Office of the Ministry.

Teacher Support

Teaching and learning materials must be provided in practical subjects to let those who are good in them learn as much as those who are good in academic subjects.

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Teaching and Learning: Mapping the Contextual Influences

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This paper outlines a conceptual map that allows new academic staff in universities to see the relationship of teaching and learning within a context wider than their individual specialisations. These wider contexts include the institutional context and its sub-contexts, as well as local, national and international contexts. Examples are given to illustrate how the conceptual map has been applied not only within Victoria University but also in New Zealand schools. The teaching-learning conceptual map is particularly useful in interpreting the different notions of learner-centredness for it recognises the totality of learning activities within an institution.

teaching, learning, conceptual map, contextual factors, university education, New Zealand

INTRODUCTION

At Victoria University of Wellington, the provision of teacher training for academic staff lies with the University Teaching Development Centre (UTDC). The Centre works with staff and departments to provide a range of workshops and advisory services on teaching, learning, course and program design, assessment, evaluation, supervisory practices and the use of information and communication technologies in teaching and learning. In addition, it monitors the literature on higher education on behalf of the University to identify trends and developments that might have an impact on the education provided to students.

The purpose of this paper is to outline a conceptual map developed by two former staff of the UTDC, which looks at the relationship of teaching and learning within an ecological framework. The map has been used to encourage new academic staff to recognise the contextual factors that impact on student learning in the courses (papers or modules) that they teach. The relevance of this map for the literature on quality in higher education will become apparent: the focus is on the transformational role of university education for student and community learning. University education should empower students and the community through the learning experiences that are provided (Harvey and Knight, 1996).

This paper focuses in particular on the use of the map with new academic staff to enable them to see the bigger picture of university education rather than simply the narrow confines of their subject specialisation. Towards the end of the paper, examples of the application of the map are provided along with a discussion of the implications of the map for the concept of 'learner-centredness'.

MAPS AND MODELS

It may be useful first to explain why the writers have used the term 'map' rather than 'model' to describe the framework presented in this paper. The term model conveys to most people the notion of a theoretical framework that is used to explain or interpret the connections between

events or entities; a model is assumed to be generalisable to a specified range of situations or a population of events or objects. Often a model makes use of quantitative data in order to replicate or simulate real-life events. While the framework being presented here uses both research and argument to justify its structure and shape, and contains most of the elements that would give it the status of a model, the writers are unwilling to ascribe it this status (although in earlier conceptions we called it a model). ‘Purpose’ is a critical factor: our aim is to communicate meaningfully with other academics, not to make claims about the objectivity of our views. The framework sets in place a starting point for identifying, as we see it, the many different factors that impinge on our roles as teachers and researchers. It shows how we have organised our thinking. However, it may provide a useful (but not the only) starting point for other academics to think about how their teaching and research activities link with the needs of students, the discipline, the university and the wider community.

The concept of a map as used by the writers takes account of purpose and perspective. It includes the recognition that those producing a map have a particular frame of reference or set of premises that are guiding their thinking and direction. Change the frame of reference or purpose and a different map is needed. This is no different than recognising that a public transport map (eg. the London underground) serves a different purpose and highlights different landmarks than a street map. (One of the writers on his first visit to London, took a 30 minute tube journey, changing trains in the process, only to find out later from a street map that the journey could have been walked in 10 minutes. The wrong map was used!)

The remaining point to make about models and maps is that the educational literature abounds with different (but often very similar) so-called ‘models’ of teaching and learning. For example, Ramsden (1992); Biggs (1999); Prosser and Trigwell (1999) all provide models that depict relational features of teaching and learning. The map presented here can be thought of as a different way of looking at the terrain of factors which impact on student learning. Another map is provided by Horsburgh (1999); she draws together the elements that she sees as important for ensuring that university education is a transformational experience. The important point to note is that each construction of the terrain of teaching and learning is valid because each makes sense of the particular features that the writer wants to highlight. The ultimate test of the utility of a map is that it understandable to readers, makes sense of the known literature and research, and is relevant for practitioners in their own teaching and learning contexts; that there could be different maps is not problematic. The final word is left to Fay (1996) who uses the analogy of a map to argue the limitations of objectivism:

In cartography there is no “One Best Map” of any particular terrain. For any terrain an indefinite number of useful maps is possible, each depending on the aspect of the terrain highlighted as an entity, the mode of its representation itself contingent on the uses to which the map will be put, and on the perspective from which the map is drawn. (Fay, 1996, p.210)

A RELATIONAL MAP OF TEACHING AND LEARNING

Figure 1 identifies the key components of the relational map of teaching and learning developed by the writers (hereinafter called the ‘T-L map’). The central core of the map is the interface between the students, the content of a course (paper or module), and the teacher. These are the corner stones of any formal teaching-learning context, even if the medium of teaching and learning is in some way IT or distance based. The way in which the teacher and students work together in respect of unravelling the content influences directly the effectiveness of the learning. However, the T-L map recognises the presence of key relationships, which link these components:

- student understanding of the content – this is the key outcome of the teaching-learning process;
- staff expertise of the subject – this is a requirement for any effective teaching performance and one which draws upon the teacher's ability to integrate latest research into the knowledge base of a subject; and
- staff-student rapport – this is a hypothetical construct for representing the many teaching and interpersonal attributes of academics that motivate students to perform to higher levels.

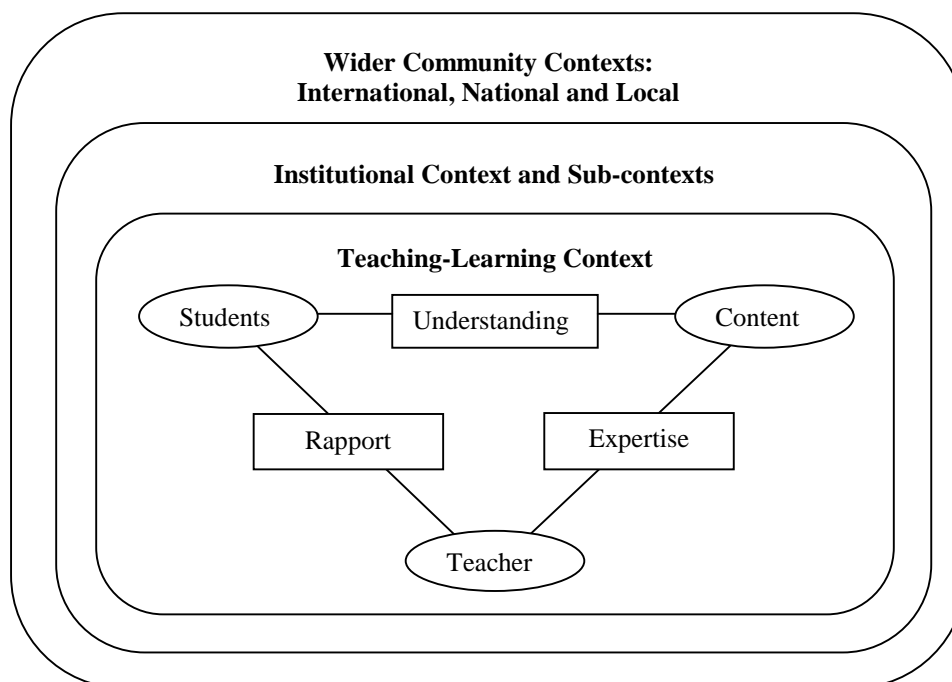


Figure 1. Relational Map of Teaching and Learning (the T-L map)

The T-L map also recognises at least three levels of context in which teachers and students operate: the immediate teaching-learning context of the course, including the instructional processes and activities which the teacher puts in place; the institutional context, which can be divided in various ways into sub-contexts (eg. department, faculty); and the wider community context (local, national and international). In this respect, the map has features similar to the ecological approach taken by Bronfenbrenner (1979) to the study of human development.

The following discussion explains each component of the map in more detail.

CENTRAL ELEMENTS OF THE T-L MAP: STUDENTS, TEACHER AND CONTENT

Students

Academic staff need to have knowledge of their students. Who are they? Where are they from? What reasons do they give for enrolling in the course? What background knowledge and skills do they bring to the course? What are the age, gender and ethnic characteristics of the class? What educational and professional qualifications do students already hold? Do the students have a rich work experience, or are they mainly straight from school? What approaches to study do they bring? And what networks already exist among students for peer support in learning?

These questions are important for several reasons: they enable the teacher to locate the likely strengths and weaknesses of students (collectively as a class, if not individually) and build on the students' existing knowledge and skills; they also enable the teacher to contextualise material to

students' background, interests and goals; they assist the teacher to think about class dynamics and ways of building small group activities into the teaching-learning environment; and they enable the teacher to cue in more quickly to informal feedback on the relevance and value of the material being taught. Knowledge of students aids a teacher in virtually all phases of the planning and delivery of a course – the design, teaching, classroom management, assessment, and evaluation – and helps to establish rapport with the class.

Content

The word 'content' is used here to refer to the knowledge, skills and values, which are the domain of a particular course (or module or paper). However, the notion of content held by the writers is premised on the educational goal that what is taught should ordinarily be less than what is learned ($T < L$). This captures the idea that a key role of the teacher is to stimulate students to go beyond the prescribed content – to foster both cooperative and independent learning strategies, which take students further than what is achieved through the direct transmission of knowledge from teacher to students. However, it is relevant to note that students and teachers come together because of content. Students recognise the teacher's expertise and expect that their own knowledge and skills will be enhanced by their contact with the teacher. Control over the prescribed content principally rests with the teacher or a higher authority, but a good teacher will find ways of allowing students to share some of this responsibility. This becomes increasingly important as the student advances through his or her university education.

Underpinning the content of a course are a number of key design questions that must be addressed by the teacher. To what extent does the course embody the broader goals of a university education (eg. life-long learning and the graduate profile)? How does the course relate to others in the same program? What prerequisite and co-requisite skills are expected of students? What provisions exist for diagnostic and bridging assistance? What professional skills or competencies are expected to be covered? What scope exists for student choice? And what external groups should be consulted in the development of the course?

The importance of these questions is clear. Basic principles of program and course design require that coherence exists between the different courses in the same program (that is, together they should make a sensible learning program for students), and that within a course, the content, sequence, assessment and delivery should all be consistent with the objectives or intended outcomes. (Note: a well designed course will allow for – not stifle – the achievement of unexpected outcomes which take student learning to a new plain). It should be noted that considerable emphasis is now placed on ensuring that programs and courses meet the needs of students and other groups who have a stake in the education being provided. Within New Zealand, current program approval procedures operated by the New Zealand Vice Chancellors' Committee (NZVCC) and the New Zealand Qualifications Authority (NZQA) in fact require evidence of appropriate internal and external consultation.

Teacher

The map places great importance on teachers reflecting on their own knowledge, skills, values and professional development as teachers and researchers. Within academic development workshops conducted by the UTDC, teachers are asked to focus on what they see as their role in student learning, to articulate their implicit and explicit theories of teaching, to identify where they need to focus to enhance their own teaching and research development, and to contemplate through the model the strategies that they can employ for fostering student learning and involvement in the subject.

To complement the self-reflections of teachers, the UTDC has undertaken a range of training needs analysis to assist staff understand more clearly the University's expectations of them. One study of particular significance focused on the key teaching roles of the university lecturer (Milliken, 1990). This study identified several key teaching roles, which have subsequently been revised twice by Hall (1996; in preparation). The key roles are listed in Figure 2.

This analysis, perhaps more than any other undertaken by the UTDC, identifies the scope of the teaching function of the university lecturer. It shows very clearly the importance of a teacher's commitment to the subject, to students, to teaching, to oneself through professional development, and within New Zealand to partnership with Maori. The scope of the work and the implications for professional development cannot be underestimated.

<p>Subject expert: The role of achieving and maintaining expert knowledge and skills in a chosen subject area or areas.</p> <p>Course designer and manager: The role of designing an academic course and of planning for, managing, and evaluating the human and material resources required.</p> <p>Communicator: The role of exchanging information, knowledge and ideas to maintain positive working relationships and promote student learning.</p> <p>Assessor: The role of planning an assessment program for a course, writing valid assessment tasks, marking student work, and providing constructive feedback to students.</p> <p>Motivator/empowerer of learning: The role of providing conditions which stimulate students to think and learn, and which encourage students to take responsibility for their own learning.</p> <p>Academic adviser: The role of giving students accurate information and advice in a way which reconciles their own goals with University regulations.</p> <p>Research supervisor: The role of encouraging and guiding students towards the successful completion of a research project.</p> <p>Evaluator: The role of making effective use of formal and informal feedback to review and enhance the quality of student learning.</p> <p>Bi-cultural partner: The role of providing the conditions that encourage both Maori and non-Maori students to participate fully in the activities of a course or program.</p> <p>Self-manager: The role of actively fulfilling personal and professional goals, and of managing one's own work and one's own development as a teacher and researcher.</p> <p>Note: Based on discussions with several colleagues in Australian and New Zealand universities, the writers have included the following additional role to take account of the growing need for academics to engage with information and communication technologies in their teaching. This role is seen as covering many of the tools that academics need for keeping abreast of technological advances in teaching and learning. The only issue is whether the role should be given separate status or be seen as integral to other roles. The writers subscribe to the latter view but recognise that to highlight its importance, the role requires specific mention.</p> <p>IT user: The role of selecting and using competently a range of information and communication technologies to enhance the pedagogical processes of a course and to maintain one's own expertise of a subject.</p>

Figure 2: Key Teaching Roles of the University Lecturer at Victoria University

THE KEY RELATIONSHIPS: EXPERTISE, RAPPORT AND UNDERSTANDING

Figure 1 identifies a basic relationship connecting each of the central elements of the map (students, teacher and content). Each relationship is encapsulated in a notion that conveys a helpful message or signal for fostering teacher reflection on the contexts of the work.

Expertise

The key relationship between teacher and content is embodied in the notion of expertise. Teachers must keep abreast of their subject, conduct research, network with colleagues, disseminate information about their subject, and integrate different theories and research findings relevant to their teaching. Underpinning this work within New Zealand is the need to foster the teaching-research nexus in line with the *Education Act 1989*, which identifies the interdependence of teaching and research as a defining characteristic of a university. For example, academic staff are expected to:

- undertake research and study leave and report on these from the perspective of the benefit to their teaching;
- attend conferences in their subject in order to maintain currency in their research and teaching;
- include their own research, and the research of others, in course content;
- require students to conduct research or use research skills in assignment work;
- require students to conduct laboratory experiments and participate in field trips;
- use colleagues to teach in areas of their research expertise; and
- use external experts to give lectures or lead seminars.

Rapport

The key relationship between teacher and student is embodied in the notion of rapport. This takes account of research findings on the teacher attributes and behaviours that students have identified as important for encouraging their learning and understanding. For example, ten years of student evaluations at Victoria University has identified that attitude to students, mutual respect, clarity of communication, organisation of teaching, constructive feedback, teacher enthusiasm, intellectual challenge and approachability are all very positively correlated and strongly linked to the building of an effective relationship between teacher and students. Similar conclusions have been reached in overseas research on teaching and learning (see, for example, Entwistle (1992), Ramsden (1992), The University of Adelaide (1992) and Biggs (1999) for summaries of key findings and principles). If students and teachers get on well with each other, the conditions exist for students to take greater control of their learning. The desire of students to succeed is typically reinforced by a positive professional relationship between themselves and their teacher.

Understanding

The key relationship between students and content is the notion of 'understanding' in the form of a bridge that students have actively to build. In this context, understanding is used in its broadest sense to mean not only understanding of meaning but also the performance of a learned skill or the demonstration through behaviour of an intellectual or ethical value. The emphasis on student activity in their own learning is not new; it is well embedded in the work of historical figures in education such as Piaget and Dewey, and is central to the models of teaching and learning in higher education provided by Ramsden (1992), Prosser and Trigwell (1999) and Biggs (1999). It is also central to the notion of 'quality as transformation' as proposed by Harvey and Knight (1996) and illustrated through research on two educational programs in a New Zealand tertiary institution by Horsburgh (1998, 1999). The role of the teacher is to provide the expertise, the course design, the teaching and the assessment in such a way that students are encouraged to develop their understanding and go beyond the prescribed content. This in fact places demands on

teachers themselves to engage with research on student learning, including approaches to learning, orientation to study, learning styles, students' own conceptions of what learning means, principles of reinforcement, modelling, cooperative learning, constructivism, metacognition, transfer, and so on. University teachers have a responsibility to understand how to facilitate student learning, that is, how to provide the conditions... "which stimulate students to think and learn, and which encourage students to take responsibility for their own learning" (see Figure 2, the role of 'motivator/empowerer of learning').

CONTEXTUAL COMPONENTS

As already indicated, the three contextual components identified in the map are: the teaching-learning context; the institutional context and sub-contexts; and the wider community context (local, national and international).

Teaching-learning context

At the centre of the map lies the everyday teaching-learning context of a course. This focuses on both the formal and informal educational activities which impact positively or negatively on student learning. The way a teacher manages the classroom, facilitates interaction and networking among students, challenges students through the provision of stimulating assessment tasks, and provides feedback which enhances students' understanding of their learning, has an important bearing on the student course experience and their success in meeting personal, course and professional goals. A productive teaching-learning environment does not come about by chance. The ability of teachers to design good courses, establish clear objectives or intended outcomes, bring about interaction and intellectual debate, and provide quality feedback, all require planning and the development of expertise in a wide range of teaching and assessment strategies. UTDC experience indicates that students value most of all:

Content: Content that is well selected, relevant and up-to-date.

Information: Clear information about the course, its objectives, its content, the assessment requirements, and constructive feedback on work.

Engagement: Delivery that is engaging, whether through lectures, seminars, tutorials, computer based learning, or other methods.

Assessment: Tasks that are relevant, fair, and promote understanding.

Support: Access to lecturers, tutors and other persons who can provide support and clarification when blocks occur and more information is needed. Approachable teachers are a must.

This list shares a lot in common with the seven principles that Chickering and Gamson (1987) identified from a distillation of 50 years of research on teaching and learning in higher education. According to these writers, good practice:

- encourages student-faculty contact;
- encourages cooperation among students;
- encourages active learning;
- gives prompt feedback;
- emphasises time on task;
- communicates high expectations; and
- respects diverse talents and ways of learning.

Many writers have developed similar lists of what they believe are the essential characteristics of an effective teaching-learning environment. All have very clear implications for the way teachers might promote a climate of learning for their students.

The institutional context

In order to be successful, teachers must also have a good understanding of the institutional context within which they work. The institution provides the strategic direction, policies, conditions and many of the rules that govern the way teaching, learning and assessment takes place. Of particular importance is the ethos towards teaching and learning communicated by the individual departments or academic units within the institution. If students and their learning are valued, the context already exists for a teacher to establish rapport with students and to promote a course climate conducive to learning. Of relevance here are the results of a two-day symposium held at Griffith University in 1996. This symposium brought together representatives from university departments across Australia, which had been identified as achieving high satisfaction ratings from graduates using the Course Experience Questionnaire (*CEQ Symposium: Best Practice in University Teaching*). In a plenary session of the conference, Ramsden identified the following common characteristics of these departments and the programs that they offered:

- very positive departmental ethos towards students and teaching: students felt that they mattered and the teaching was of a high quality;
- very positive departmental ethos towards research and scholarship: students valued the scholarship of their teachers and their enthusiasm for the subject; and
- quality programs that made connections between theory, practice and the reasons students enrolled: teachers enabled students to draw connections between the classroom and what happens beyond the university.

The institutional context is important also because of the emphasis senior management places on quality management. For example, student advising, learning support services, assessment regulations, classroom facilities, computing resources, library services and incentives for professional development in teaching, all impact on the quality of the teaching-learning environment. A teacher in a university must understand the institutional context – the ethos, rules, conditions and rewards – and learn to work effectively within these to enhance both their own professional development and the learning opportunities for students. The teacher should also be prepared to challenge through appropriate structures those provisions that have a negative impact on the teaching-learning environment.

The wider community context

No institution exists in isolation from its wider community. In teaching development workshops at Victoria University, academic staff have been encouraged to identify the key elements in the community context which might impact on their work as teachers and researchers. Internationally, this means teachers engage with overseas scholars, professional associations and societies, and network through conferences, journals, the internet and other media. Staff need to keep abreast of international developments. Within the New Zealand context, obvious influences include: government policies on tertiary education; the Treaty of Waitangi; developments in the National Qualifications Framework; the needs of professional bodies, industry and employers; and the expectations of students' families and different community groups. Of particular significance is the recent research evaluation exercise (the Performance Based Research Fund) undertaken in the New Zealand tertiary sector and the emphasis it places on academics producing high quality research (Hall, Morris Matthews and Sawicka, 2004; Tertiary Education Commission, 2004). To some extent all university teachers need to develop a political sense about the significance of their

work and the importance of their interactions with the wider community. Furthermore, academics need to consider ways in which they can embrace their role as critic and conscience of society and thereby provide expert comment on matters of importance to the wider community. Such matters are often the basis for enhancing the relevance and quality of the education that students receive.

Of relevance here is a report from the Association of Commonwealth Universities (2001). The thesis of this publication is that universities exist in a changing world and that 'engagement' with the wider community is a core value for universities to pursue:

Commonwealth universities face high expectations from the societies of which they are part. They will be judged, and learn to judge themselves, by the variety and vitality of their interactions with society. Those interactions, and university decision-making to foster them, are what we term 'engagement'. Twenty-first century academic life is no longer pursued in seclusion (if it ever was) but rather must champion reason and imagination in engagement with the wider society and its concerns. (Association of Commonwealth Universities, 2001, p.i)

And:

Engagement implies strenuous, thoughtful, argumentative interaction with the non-university world in at least four spheres: setting universities' aims, purposes, and priorities; relating teaching and learning to the wider world; the back-and-forth dialogue between researchers and practitioners; and taking on wider responsibilities as neighbours and citizens. (Association of Commonwealth Universities, 2001, p.i)

In respect of engagement in New Zealand, it is of interest that the recent Government decision to establish Centres of Research Excellence in a limited number of higher education institutions has resulted in successful applications all coming through inter-institutional and inter-agency proposals.

APPLYING THE T-L MAP

As mentioned in the introduction, the T-L map is used as a means of encouraging academic staff to think beyond the narrow confines of their subject expertise to see the bigger picture of teaching in a university. So far evaluative feedback has been very positive from staff who have been introduced to the map. The point to note is that the map is not intended to be a singular representation of all the factors involved in influencing the teaching of a subject. It is introduced as a starting point for reflection by the teacher. Clearly different contextual factors will operate depending upon the subject, course, mix of students, and the expertise and interests of the staff. Many staff take the next step of reshaping or elaborating the picture to fit their own contexts. For example, in one VUW professional program (a masters degree), the responsibility for the curriculum – objectives, content, assessment and timetable – is negotiated between the student, a work-based mentor, and the student's academic supervisor within the faculty. For one supervisor in this program, the critical elements in the wider community are the student's work context and the role of the work-based mentor in providing support to the student. The supervisor has redrawn the model and elaborated it in a way which more accurately depicts this situation. Furthermore, he has identified a time dimension to the model that recognises that the roles of the different players in the teaching-learning environment (the student, the mentor and himself) develop and change as the student progresses through the program.

The T-L map has also been used by a number of research students at both Masters and PhD level. In one study (McCahon, 1999), the researcher used different maps (which she called 'models') to look at the macro and micro levels of her data; an earlier version of the T-L map provided a macro picture of the contextual aids and difficulties involved in a distance program for librarians. More

specific features of the teaching-learning environment were conveyed in a different model – this was seen as complementing and extending the T-L map.

In another completed thesis (Hollard, 2001), the researcher used the T-L map as a starting point for conceptualising contextual issues around sexuality education in New Zealand schools. As the thesis developed, the map evolved to incorporate lines of interaction, which focused on those factors that facilitated or inhibited the ability of a school to implement a relevant program.

One further use of the map should be mentioned. One of the writers has conducted focus group evaluations of several postgraduate programs at Victoria University. Typically, such evaluations proceed in four stages: the participants (students of a program) first meet with the evaluator to be briefed about the process, including the details of the purpose, the methodology, ethical considerations (eg. confidentiality and the right to withdraw), and the reporting of the results. In the second stage, focus group methods are used to elicit the views of the participants about various aspects of the program, including important contextual information. In the third stage, the views of the participants are summarised and returned to the participants for verification. A report is then prepared for the program coordinator.

From the perspective of the T-L map described here, the first and second stages of this evaluation procedure are the most important. In the discussion of the proposed methodology, participants are introduced to the map as a way of enabling them to think more broadly about the factors that have either helped them with their learning or have created problems. With respect to the map, students usually have no difficulties in understanding its construction and are able to identify quickly what for them are the key features in their learning environment (wider community, institutional and teaching-learning). It should be noted that not all the factors that foster or discourage learning lie in the immediate teaching-learning context. For example, in one program, students complained strongly about the removal of access to a tearoom, which had provided a very important location for student interaction; one of the significant elements of the social contexts of learning for these students was removed. In effect, the use of the T-L map had enabled these students to focus on an issue, which might otherwise not have been noted through more conventional evaluation procedures.

THE INTERPRETATION OF LEARNER-CENTREDNESS WITHIN THE T-L MAP

The notion of learner-centredness is one which many academics subscribe to although it is not always clear what they mean by this term. For some it means ‘focusing on the learning needs’ of students, but exactly what these needs are is not always explicit or even understood by many teachers. For others, learner-centredness focuses on the provision of choice and clear information so that students are well informed about the content and requirements of a program. Others see learner-centredness in terms of flexible learning – giving students a degree of control over aspects of their learning, such as when to study, where to study, how to study, what to study, and so on. Still others see learner-centredness in terms of the provision of activities which promote ideals such as life-long learning, being a reflective practitioner, being an independent learner, or the possession of qualities specified in a graduate profile. The writers accept that all of these may constitute important aspects of learner-centredness, but the T-L map provides a more coherent way of bringing these different conceptions together.

A key factor in the development of the T-L map is the writers’ concerns about the approaches to teaching and learning that many academics seem to adopt. Some follow a so-called ‘transmission’ model of teaching which is essentially content-centred in focus. Others follow what they believe to be a student or customer-centred approach but in the process they appear to lose sight of the knowledge base of the subject they are teaching. Others (only a few) seem to put themselves at the centre of the teaching-learning environment – their own charisma seems more important than the

content of the subject or the needs of students. Within the map presented here, the students, content and teacher are all seen as central to the teaching-learning environment; all have to be considered and in some way harmonised in order to be learner-centred. Furthermore, the contexts of learning must also be considered so that students benefit not only from the immediate teaching and learning environment, but also from the support services available in the institution and the engagements that academics and students themselves make with the wider community.

CONCLUSION

In summarising this paper from the perspective of learner-centredness, the writers emphasise all of the following as important:

- A teacher must know the students, collectively if not individually. A teacher should have a good idea of why students have chosen to enrol in a course; where they are coming from; what they bring in terms of previous knowledge and experience; where they are going; and what motivates them. This is not as difficult as some people think. A lot of this comes about through experience. It can also be accelerated by use of questionnaires, tutorial contact, office hours, and just taking a little time to talk and listen to students.
- If a teacher is to provide the conditions that foster student involvement in the subject, the teacher must ensure that he or she has developed, and continues to develop, teaching and assessment strategies that promote student reflection and learning. In other words, the teacher must address her or his own professional development in order to become an effective teacher. There must be a focus on the self.
- Content cannot be ignored or given a minor place in the teaching-learning environment. The reason teachers and students come together is because of a particular content. The adage “you can't change knowledge if you don't have knowledge” applies very much to university education. Respect for knowledge and respect for sources of knowledge are important for scholarly study.
- A teacher must also recognise the importance of context in student learning. A teacher needs to understand and use institutional provisions to assist students to network with each other and make effective use of the facilities that are available to them. A teacher should also apply pressure through appropriate channels to remove the system blocks that inhibit student learning.
- Lastly, teachers should engage with the wider community in those spheres of their teaching and research that have obvious educational relevance to external bodies, agencies, stakeholders and community groups. Such interactions can only improve the currency and relevance of the education students receive.

In the above conception, ‘learner-centredness’ is not simply a focus on students; it is the harmonisation of many factors that work to the benefit of students. There must be a focus on the needs of students, the knowledge base of a program, teacher professional development, the teaching-learning context, and interaction with the wider community.

Of interest to the last point is a text on university education by Bowden and Marton (1999). In this text, the authors argue the case for reconceptualising the modern day university from the notion of a **University of Teaching and Research** to a **University of Learning**. The shift to a focus on ‘learning’ is important because it recognises that knowledge formation takes place at two levels – the individual level as students come to understand the content of the courses they study, and at the collective level through research where ... “human knowledge in its entirety is also widened and humanity learns” (Bowden and Marton, 1999, p.4). The importance of this conception for the

present paper is that the focus on learning recognises that students, academics, institutions and the community are all involved in the learning process – they are, in fact, all learners from the activities of a university. Learner-centredness is more than simply a focus on students – it recognises the totality of the learning activities of a university. The T-L map presented here embodies this totality.

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Learning at University: The International Student Experience¹

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This paper reports on research that explores internationalisation of the University's curriculum offerings and how this affects international students. The central focus of this paper is to highlight some of the student commentary on communication between teachers and students exemplifying the way it subsequently affects the quality of student learning. The paper concludes by raising some questions concerning how we may best meet the needs of international students by drawing on inclusive teaching philosophies.

Inclusivity and diversity, international students, internationalisation and sustainability, transition experience

INTRODUCTION

The internationalisation of curriculum in Australian universities has increased significantly in recent years. International students (IS) are now an integral part of university teaching classes. The rapid increase in international student numbers is also reflected in current research. However, relatively little research has focused on the student perspective (Ballard and Clanchy, 1991; Jones, Robertson, and Line, 1999; Ramburuth, 2001; Reid, 2002). This paper is a contribution to this area of higher education research.

The accommodation of IS is an important goal in the Australian higher education sector that is reflected in the commitment to quality education and teaching expertise. The benefits of the integration of IS into the Australian academic cultures are highly esteemed by university leadership. The diversity of our university populations is enhanced by IS and further research may be found by exploring how diversity may add value to the transition experience as a whole (McInnes, 2001). However, reports on students' experiences provide a somewhat contrary understanding of that experience. For example, Reid (2002) conducted a comprehensive study, which surveyed over 300 postgraduate IS at Macquarie University. Contrary to common beliefs, about students from Asian backgrounds in particular, IS students were reported to value the interactive mode (*i.e.* discussion based learning) of unit delivery over a sometimes assumed teacher centred mode. Another example is the common stereotypical belief that students from Asian backgrounds prefer rote-learning styles and tend to be passive in classroom interaction. It seems then, at least rhetorically, that ideas about what constitutes high quality teaching and learning differ between international students and academic personnel.

¹ This paper is adapted from one presented at *Celebrating Teaching at Macquarie* 28-29 November 2002 (Hellstén and Prescott, 2002).

If the practices that characterise quality are perceived and acted out differently by members of Western and Eastern cultural groups it assumes a questioning of the very meaning of concepts such as 'quality' and 'teaching'. These can account for deeply contrasting expectations of educational practice. International students' cultural traits have been blamed for subsequent teaching and learning problems (for example, Burns, 1991; Jones et al., 1999; Leask, 1999; McInnes, 2001; Ryan, 2000). Some problems include poor English language and critical thinking skills, failure to participate in the collaborative learning mode (for example, group discussions), differences in cultural communication, academic literacy styles, and expectations of rote learning resulting in lack of independent learning initiatives. Where does this occur?

Some researchers have refuted these claims. Biggs (1999) provides a broad review of research findings that reveal institutional stereotyping of students from Asian backgrounds. He argues that such students continue to rank in the top levels of university courses, which testifies to their ability to adjust well into the Western learning cultures. The issues and problems are no different from those generally raised by researchers in the field of the first year experience of mainstream students undergoing the transition to an academic university culture (Levy, Osborn, and Plunkett, 2003; McInnes, 2001). Biggs (1999) reports on results showing that at least for some, the mainstream transition experience is fraught with uncertainties about fitting in to disciplinary cultures in terms of academic writing genres (for example, Krause, 2001). Anecdotal evidence suggests that students quickly develop the ability to work out their position within disciplinary cultures, with beginning students being able to guess at what is important as sanctioned disciplinary practice within three weeks of commencing their studies in a major discipline area. Therefore, research is needed into the acquisition of disciplinary know-how that seems readily accessible by students in universities; a skill that would not in such cases be acknowledged by the academic community.

What seems to be at the core of the debate is the notion of communication between IS and university staff (Hellstén, 2002). There seems to be a need to increase cultural understanding that is reflected in the ways in which pedagogy and practice are mediated between IS and academics. There also seems to be a need to establish opportunities for discussion between IS and staff about the communicative differences that constitute pedagogy, and the way in which these are reflected in the university teaching settings.

In order to examine the relationship between cultural practices and pedagogy among incoming students we conducted one-hour, semi-structured sessions with volunteer IS in their first year in Australia. The 48 participants (undergraduate and postgraduate) were enrolled in many different discipline areas of the University, as shown in Table 1, and came from a range of countries around the world, presented in Table 2.

Table 1. Participants' course of study

	Undergraduate	Postgraduate	Total
Accounting	3	1	4
Actuarial	3		3
Commerce	1	2	3
Economics	1		1
Translation	1	13	14
TESOL		3	3
Linguistics	1	6	7
Languages	1		1
Education		3	3
Anthropology	2		2
Computing	1		1
Exchange	4	2	6
Total	18	30	48

Table 2. Participants' country of origin (N=48)

Country	No.	Country	No.
China	16	Sweden	1
South Korea	13	Sri Lanka	1
USA	5	Spain	1
Japan	2	Singapore	1
Germany	1	Malaysia	1
Vietnam	1	Kenya	1
Thailand	1	Indonesia	1
Taiwan	1	Hong Kong	1

Of central interest was the first six-month time period following overseas students' arrival that constituted their transition period between the old and new learning environments. The questions centred on the students' encounters with Australian communities, learning environments and the academic disciplines. We were also interested in the students' overall sense of experience as reflected in subsequent word-of-mouth referrals to fellow students in their home country. We found important impressions inherent in such descriptions. They provided insight into aspects that might otherwise have been hidden due to discursive politeness and courtesy constraints of the interview. Below are some features of their commentary.

COMMUNICATING IN CLASS

One of the common assumptions made about IS from Asian cultures is that they find it difficult to contribute in class and to participate in classroom discussions. There are many substantial explanations for this, the most salient being that IS feel self-conscious if conversational flow does not come easily in the English language. This shows in their reluctance in attempting to pronounce English words for fear of failure in front of the evaluative eye of other native speakers.

Yes.... Um... they [teachers] think it's a job. They ask something. We say nothing... 'cause we wanna say but ... (inaudible) shy. And I'm afraid sometimes I'll make a mistake, so I don't want to like that ...

I think, my friends, sometimes they stay in one course for two ... months. Because their character very shy. They don't want to say, you know, anything even though they know everything. They know everything. So teachers didn't know that.

It's just hard and difficult. I don't know the feeling, the nuance, I don't know those in English so.. I... I'm not a good English speaker at all. It's very uncomfortable when I talk with somebody. So I think I... When I speak with Australians I feel they treats me as a children, you know. And they think of me as a just a... [indicates height of a child with hand] that language level person. Like a ten year old kid.

In conversation with native speakers the student in the third example feels she is being spoken to in the diminutive voice. The perception that others speak to her 'as a child' must be damaging to her self-esteem as an academically successful individual. The perpetuation of this perception may in turn result in a reluctance to speak in public, thereby accentuating a difficulty in the learning process.

COMMUNICATION ISSUES

A common communicative feature is for speakers to adjust their conversational style to suit each other in terms of genre and register. Australian lecturers of IS are perceived to lower their level of language use in the hope of making their teaching more effective and beneficial for low level language speakers (Jones, 2001).

The consensus was that the mode of delivery was easier than that expected of mainstream students. The necessary feedback may not have reached the lecturers due to culture-specific constraints for politeness in discourses. For example, students from some cultural backgrounds did not feel comfortable offering criticism of their teachers as a gesture of respect:

The one thing is they (lecturers) try to speak easier (laughter) because sometimes we misunderstood. And lecturer say to student but nobody nodded. So he try to explain again. So I think most of the Australian lecturer try to give lecture (in an) easier way.

Delivering lectures using lower level language registers can be perceived as contrary to IS expectations of improving English proficiency as part of their student experience in an English speaking country.

Before I came here I think uh, if I got to Australia I will improve my English skills really very fast. But it's just a dream. I must do everything. Every day I practise, practise, practise for this.

Within this commentary is the realisation that achievement in the learning experience hinges solely on personal investment of time and practice. The interpretation here is the refusal of the lecturer to provide the necessary skills to which the student aspires. It is also a reaction to the realisation that the low level of language provided by the classroom interaction would not provide him with advanced level linguistic ability — a rather troublesome side effect of an overseas university experience in an English-speaking country. It seems, based on our student commentary, that the slowing down of English language learning results, at least in some cases, is a lack of challenging classroom opportunities. So adjusting to a conversational style may not be useful and may be interpreted by IS as a gesture that further marginalises them from mainstream students.

Leaving the social comfort of home country for study in a foreign country, language and culture can be a harrowing experience, especially for younger international students. The mentoring programs in place within universities go some way toward meeting the basic transition needs. However, the interviews revealed that IS consign the responsibility of teaching to lecturers rather than the institution. On this theme, one feature of the discussion is the student perception of a lack of support by the teaching staff. For example:

So, I want teacher to encourage that, and like mum or dad... yes, to take care of them (other IS) a lot because they are really shy and they sometimes they don't understand.... Just to say 'OK'. I want our teachers to know that.

So there is a consultant. He consult with me. But he is really busy. I can't contact easily. Just the one (consultant) and a lot of students here. So, and he only work... I think, twice maybe three days a week. So I can't meet."(Is this a reference to a teacher or a student counsellor?)

I visit many times this office. When I need their help I am looking for someone but I can't.

Commentary about the unavailability of consultation opportunities is extensive among newly arrived international students in our study. We suggest that this lack of resources is partly a by-product of the current global economic rationalisation in the higher education sector; the effect of which is compounded for IS who often have greater needs than local students. There is a perception that special efforts should be made by academic staff to accommodate incoming students' needs. This is attributed to the need for care and emotional support, and in a familial sense as tantamount to so-called 'parenting'. This is especially voiced in talk about the younger IS groups. The ethic of care is an expectation of the teaching practices by the students interviewed.

The unavailability of part-time staff poses a further problem for international students due to the pressures imposed by their timed candidature. There is a sense of urgency about the study program and waiting to see staff who are not available is interpreted as obstructing progress toward the completion of the degree. Such concerns are directly linked with the marketing of education in the new global knowledge economy (Rizvi, 2000). Certainly, international competition for student places and resources is of central interest to Australia as one of the Western English speaking countries with extensively developed international education targets. Australia is competing against other English speaking countries for IS numbers. The competition and urgency of this new global dynamic is then reflected in the responses of IS and may result in the experiences perceived as less desirable as in the above commentary. The commitment to internationalising the curriculum needs to seek critical and innovative solutions to a re-evaluation of existing curriculum content, enhanced capacity and mode of program delivery.

To this end, Bellis and Clarke (2001) found a course online bulletin board to be extremely useful for students interacting with other students and staff. Students were encouraged to discuss difficulties among themselves, with academics only participating when necessary. While Bellis and Clarke recognise that not all students participated, for IS whose first language is not English, a bulletin board allowed students to think about and compose their response without the pressure of the discussion progressing past the point where they wanted to participate.

SOME IMPLICATIONS

There is a widespread call for implementation of various bridging programs to prepare IS better in their transition to the Australian study environment (Jones et al., 1999; Leask, 1999; Ryan, 2000). Successful mentoring programs are in place in many universities (Austin, Covalea, and Weal, 2002). These go a long way toward the creation of important links between IS and Australian communities and may decrease feelings of social isolation and loneliness. Implications can be considered in terms of enhancing culturally sensitive curriculum delivery and communication, and by enhancing a reflective and inclusive teaching culture throughout the university.

Implications for teaching and learning

Some useful resources for the critical examination of our teaching modes and practices may be found in a number of professional-development initiatives. Inclusive teaching practices are particularly pertinent. While inclusive teaching philosophies are part of effective teaching policies, whether in schools or universities, there seems to be some uncertainty about their applicability to the teaching setting. Making the curriculum and its discourses explicit is a starting point discussed by Leask (1999) and Garcia (1991). Provision of obvious and workable program and assessment guidelines that are sensitive to individual variation and diversity are also listed among their recommendations.

One implication that emerged from the current study involves the need to provide opportunities for staff to communicate and reflect upon their practices in teaching IS. One cost-effective way is the formation of focus groups that contain impartial representatives of the international student body (such as representatives of the National Liaison Student group) who convey the views of students to academic and other staff. Awareness of cultural open-mindedness and responsibility towards IS is an issue that could be explored. Information sessions may address the examination of religious and other culturally divergent traditions, as well as culture specific discourses. Rizvi (2000) calls for the internationalisation of curriculum to ensure the promotion of cultural change, that would become part of both the mainstream and other groupings. The culturally sensitive curriculum would then move away from the stereotypical thinking that claims internationalisation as a responsibility that belongs to someone else other than oneself (Leask, 1999).

The underlying premise of Leask's (1999) statement of shared responsibility for the internationalisation of the Australian higher education curriculum prescribes that strategies are put into practice to enable the meeting of individual IS needs for communication. Where this relates to increasing staff availability, further resources may be needed. Clearly, the conditions of IS academic experience rest on adherence to time management and other restrictions as dictated by temporary visa requirements. Such constraints necessitate mediation with academic and other university staff for increased accountability and loyalty to consultations and other scheduled commitments. One suggestion for implementation is to make a point of contact facility available that is staffed by academics and experienced IS mentors. We found that many of the questions of incoming IS are of a general nature and can be answered by individuals within the university system. Such a facility (for example, an information booth, linked to an on-line service) meets the deeper need for social and emotional support that is currently felt by new students to be lacking.

Garcia (1991, p.3) points out that classroom teachers who were thought by others to be "highly committed to the educational success of their students" perceived themselves as being "instructional innovators utilising new learning theories and instructional philosophies to guide their practice". Professional development activities were also considered to be important. They had high educational expectations for their students. Some students in our study thought their lecturers were off-hand about their students' success or failure. It would appear, therefore, that good teaching is recognisable, no matter what the venue.

Implications for practice

Educational practices are largely related to everyday conduct, held values and attributive actions. To this effect, we benefit from recommendations for teaching methods that draw on reflective and inclusive teaching philosophies. However, it is our experience that these philosophies are not entirely understood by the academic community. There needs to be some recognition of inclusivity as a dynamic negotiation, as opposed to the domination of one over another. This reasoning makes the notion of flexibility and change everyday requirements for the accommodation of diversity in our teaching and learning settings. There still exists a great need among academics in Australia to reflect upon their cultural affiliations, to explore their ethnicities and acknowledge that these are not only traits we identify in others but also in ourselves. This reflection should then allow for inclusive practice to begin by asking, what can I do to meet the particular cultural and discursive needs of international students. This may in itself, and without further extended effort, transfer into the duty of care for the IS in particular classroom settings.

However, there are some recommendations that provide examples to implement culturally inclusive practices into the teaching of IS. An initial issue is to consider a needs analysis of the students and how their needs can be met within the constraints of the teaching program. A second issue is, to allow for flexibility in understanding some of the cultural discourses and genres that may be encountered in communicative exchanges with IS. Knowledge of the background of students acknowledges an acceptance and interest in their cultural backgrounds. There are many publications describing cultural practices of particular nationalities. For example, an exploration of different religious and cultural traditions may provide stimulating introductory material particularly if this is carried out with sensitivity and without marginalising individual students in the group. Another effective introductory session may investigate communication conventions of different cultural groups. Allowing students to explore culturally specific behaviours such as the use of voice, tone, affect, body language and body contact in communicating with different members of the community may also open up channels of communication between staff and students. This may also act as effective preparation for later identification of unexpected features of communicative conduct.

CONCLUDING COMMENTS

The internationalisation of Australian higher education is still in its infancy inviting greater collaborative effort from university communities. Although many generalisations exist, we now widely acknowledge the possibly erroneous perception of quantity underwriting quality. There is a discernment that increased numbers of IS have not reflected in the capacities of learning institutions in terms of the provision of quality and expertise — at least when it comes to inclusive practices and culturally sensitive communication styles. The implications addressed here go some way towards meeting these needs. Further investigation is clearly necessary especially in comparing student commentary with staff perceptions and experiences. The assurance of quality teaching and the provision of culturally amenable learning opportunities for international students may be achieved by means of cultural change and critical evaluation of current academic discourses and practices.

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The Relationship Between Thai Students' Choices of International Education and their Families

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This paper explores the relationship between influencing factors from family on Thai students' choices of international education. The study classifies choices of international education into the decision to study abroad, choice of country, city, academic program, and of university. The influences from family are identified as finance, information, expectation, persuasion, and competition. The results indicate a positive relationship between choices and influencing factors. However, the degree of associations between variables are mixed. The decision making-process of Thai students is complex and involves various stakeholders. This information affords protagonists marketing Australian education a better understanding of choices made by international students.

family, education choices, international students, Thailand

INTRODUCTION

Globalisation has impacted on higher education such that there is an increasing flow of students across borders. Higher education is part of the increasing globalisation of the trade in goods and services. De Wit (2002) identified that today's universities and academic systems worldwide seek to make themselves attractive to international students, and to build links with universities in other countries, to enhance their global reach.

Australia has become one of the key exporters of education to the global market. In 2001 Australian Education International (AEI) reported that there were 233,408 international students studying at Australian education institutions. Of these 129,071 were enrolled at universities. There were also 49,380 in the ELICOS sector, 39,845 in the Vocational Education sector, and 15,112 in the Schools sector. According to IDP's latest survey of international university student numbers for 2003, the number of international students enrolled at universities increased to 174,732. Of these 114,680 are studying on-campus in Australia and 60,052 were transnational students (IDP 2003).

Research on marketing of Australian education suggested that Australia should prepare for competition in the global market (Smart and Ang 1993). Many studies attempt to investigate the choices of international education (AIEF 1997; Lawley 1997) in order to improve marketing strategies. Previous studies suggested that interpersonal influence and recommendation from family members are one of the most important sources of information and encouragement for complex services like international education (Mazzarol and Soutar 2002). Although the interpersonal influences among family members on international students' decision-making process are diverse, previous studies (e.g. AIEF, 1997; Mazzarol and Soutar, 2002) examine only a few dimensions of the sources of influence. The gap in knowledge relating to other aspects of influencing factors from family begged for further research, in order to develop the understanding of relationship between familial influence, international students, and the educational institutions.

PUSH VS. PULL FACTORS

The influencing factors discussed in previous studies can be reclassified, by looking at their interplay in terms of home versus host countries. McMahon (1992) and Mazzarol and Soutar (2002) suggest the flow of students internationally results from a combination of 'push and pull' factors. On one hand, push factors operate within the source country and initiate the students' decision to undertake international study. On the other hand, pull factors operate within a host country to make that country relatively attractive to international students (Mazzarol and Soutar 2002).

McMahon (1992) suggested that the push model depends on the level of economic wealth, the degree of involvement of a home country in the world economy, the priority placed on education by the government of the home country, and the availability of educational opportunities in that country. Major components of the pull model, in contrast, are the economic link between home and host countries, the availability of scholarships from host nations, and political and cultural links between home and host countries.

Most studies on push-pull factors determining students' choices of international education, strive to identify the degree of importance of these various influencing factors. The influences from family in the forms of opinion and recommendation are substantially reported in previous studies (e.g. AIEF 1997; Lawley 1997; Mazzarol and Soutar 2002; Smart and Ang 1993). AIEF (1997) and Mazzarol and Soutar (2002) reported that the recommendation from family is one of the prominent push factors for international students.

THAI STUDENTS IN AUSTRALIA

AEI (2000) reported that there was a 6 per cent increase in Thai students studying in Australia institutions in 1999 over 1998. In 2000, international students from Thailand ranked ninth of all source countries (the top ten countries account for 76 per cent of all students) and accounts for 5 per cent of all Asian students in Australia. In 2001, the number of Thai students enrolled in Australian universities has grown 17 per cent from 2000. The number of Thai students in Australia from 1988-2000 is presented in Figure 1.

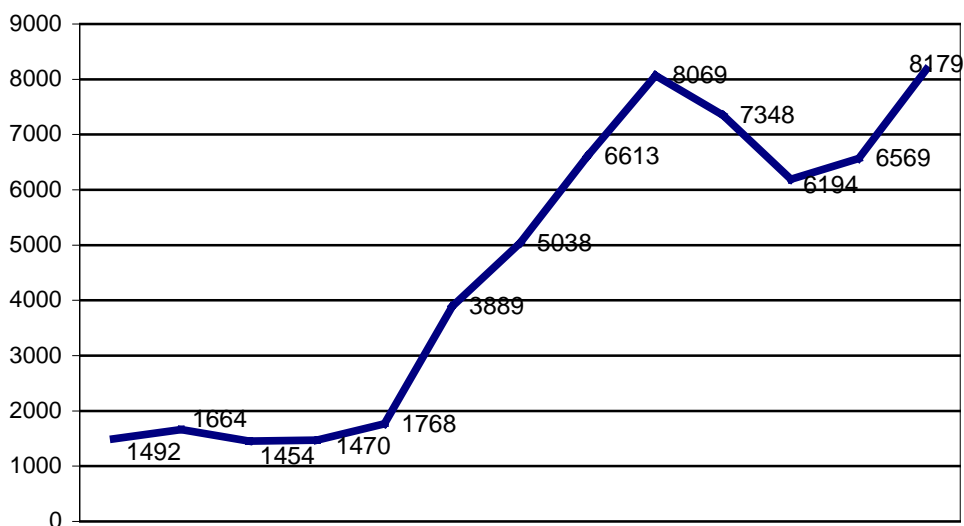


Figure1. Numbers of Thai students enrolled in Australia from 1988-2000

In terms of the education market trend for Thai students in Australia, there has been some shift of Thai students to higher education because of perceptions and job prospects after graduation (AEI 2000). Thai students are becoming more discriminating, particularly when coloured by their own

perceptions of the relative values of qualifications which are based on their experiences in Thailand, which cause 'guilt of association' for Vocational education and training (VET) providers. These shifts could explain the increase in Thai students in higher education and declines in VET, over 1996-1999, because VET courses are of one to two years duration and the highest qualification obtainable is an Advanced Diploma. For credential conscious Thai people, qualifications below Bachelor degree are generally not countenanced unless they can articulate into university courses (AEI 2000). This fact is supported by Lawley (1997) and Pimpa (2002) who concluded that the Thai market for Australian universities is predominantly postgraduate.

RESEARCH DESIGN AND METHODOLOGY

The purpose of this paper is to explore and identify the relationship between Thai students' choices of international education and influencing factors from family. Two major research questions are:

- 1) What is the pattern of relationship between family and Thai students' choices of international education?
- 2) What are the implications for people involved in marketing Australian education to Thailand?

To answer both questions, two methods were employed to clarify these research problems. Study 1 is a qualitative study that aims to identify how family influences students' choices. To further investigate the relationship between choices of international education and influencing factors from family, Study 2 employed quantitative methods (Burne, 2000). Details of each study are presented in the following section.

STUDY 1

In order to analyse how family influences Thai students' choice of international education, three focus group interviews were conducted. Each group contained nine participants. The first group of participants was recruited through Thai students associations in Victoria. Then, a snowball technique was employed to recruit the participants of the second and third groups. The researcher moderated the interviews. After a general introduction, in which the group's discussion was described as a study of "*the influence of reference groups on Thai students*", participants were asked to discuss their choices of international education, and how their family influenced these choices.

Regarding the choices of international education, Thai students revealed that they made five basic choices prior to studying abroad; the decision to study abroad (instead of studying at home), the choice of country, city, academic course, and university. The focus group discussions indicated that family is among the most important sources of influence. The results also reveal that influence from family can be slotted into one of five categories: 'finance', 'information', 'expectation', 'competition', and 'persuasion'. Selected comments from the focus group interviews are shown in Table 1.

Firstly, most students mentioned family **financial support** as one of the most important factors. Most students identified financial factors as family support for tuition fees, cost of living in a foreign country, and related expenses. Most students noted that financial support from the family might limit or expand the scope of their country choices, as their financial sponsors may support or constrain them to study in certain destinations or courses.

Secondly, **information** from any family member who used to study in Australia was mentioned as one of the influencing factors. Most Thai students asked questions regarding the country and city

of intended destination, the reputation of the academic course and the university, part-time employment, and accommodation from family members who had been living abroad.

Table 1. Selected Focus Group Comments on Family Influence

Finance	<i>I really wanted to study in the UK but my parents could not afford it, so I simply shifted to study in Australia as it is much cheaper.</i>
Information	<i>I met two relatives who graduated from Australian universities before I made my final choice to study in Australia. They said that Australia is a good country to study and overseas students can work up to 20 hours per week.</i>
Expectation	<i>My father did not attend any university, so he transferred his hope to me, to have a good education and speak English fluently.</i>
Competition	<i>I realise that I wanted to upgrade my education qualification because of many factors. One reason is when one of my uncle's daughters went to study in America.</i>
Persuasion	<i>My parents chose Melbourne for me because of my relatives whom lived here.</i>

Many students reported that they were pressured by the family **expectation** prior to their final decision to study abroad. Most students mentioned that expectation from parents and siblings had a great impact on their decision to study abroad, choices of country, academic course, and university. Some students attempted to comply with the expectations of the others, in order to satisfy them. Some students mentioned that their parents convinced them, since their childhood, that education from overseas university is superior to local education. Most students stated that their families expect them to obtain an overseas academic qualification, be fluent in a foreign language, and gain valuable life experience. Thus, this kind of idea formed their positive attitudes toward international education.

A few students expressed the view that **competition** among family members arises from comparing the opportunity and intentions of overseas study between the students themselves and the other family members, such as siblings, cousins, or relatives. It appears that Thai students tend to compare themselves with others in terms of academic achievement.

Regarding **persuasion**, some students reported two major forms of persuasion from family. Strong family opinion was frequently mentioned by many students. They said that their parents simply use the expression of like or dislike related to their decision to study abroad. Secondly, family persuasion in the form of "everyone else" was frequently mentioned by students. Their parents tried to convince them to study abroad because everyone else did it.

STUDY 2

To further investigate the findings from Study 1, the second study examined the relationship between five choices of international education and types of influence from family.

Sample

Thai full-fee paying international students were chosen as the population of the study. The researcher sent questionnaires with consent forms, both in Thai, to approximately 1,600 FPIS students from 28 higher education institutions across Australia. A total of 803 completed questionnaires were returned, and used in the analysis. A profile of the sample is presented in Table 2.

Structure of the questionnaire

The major aim of this paper is to analyse the relationship between influence from family and education family and Thai students' choices of international education. The 30 items of the

questionnaire used response categories of 1 (strongly disagree) to 5 (strongly agree). The instrument was divided into five subscales: family finance scale (FFS), family information scale (FIS), family expectation scale (FES), family competition scale (FCS), and family persuasion scale (FPS). Each subscale contains six items. Details of the scale is presented in Pimpa (2003). Regarding data analysis, Spearman's Rank Order Correlation (ρ) is used to calculate the strength of the relationship between variables.

Table 2. Profiles of the Thai students responding to the questionnaire

Age	17-44 years (mean = 24.8 years)
Gender	Male = 373, Female = 430
Level of education	Undergraduate = 274 Masters = 474 Doctoral = 55
Living Area	Bangkok = 490 Northern = 67 Southern = 47 Central = 111 North Eastern = 52 Eastern = 36
Education Background	Private school = 88 Public school = 61 Private university = 331 Public university = 323

Results

Participants were asked to rate their perception regarding the influence from family on their choices of international education. Means and standard deviations of five influencing factors (three from peers and two from agents) are presented in Figure 2.

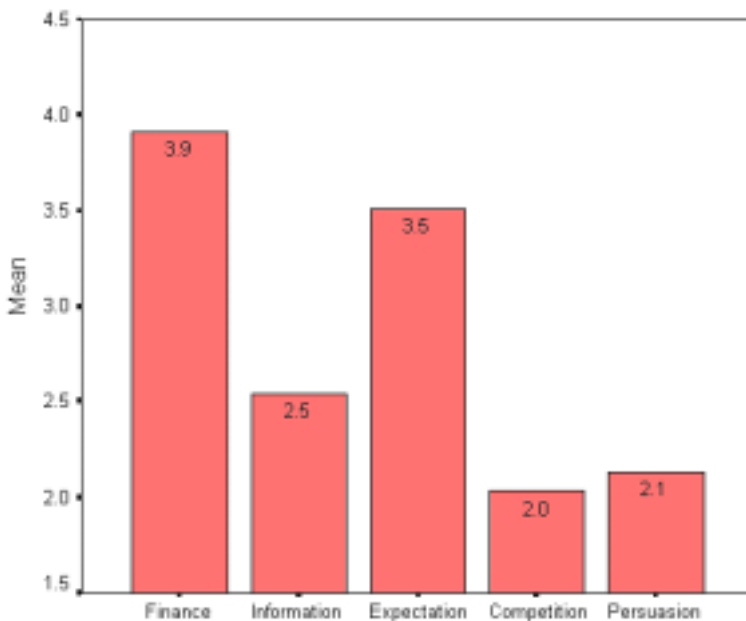


Figure 2. Types of Familial Influencing Factor

Figure 2 shows that financial support from family ($M = 3.91$, $S.D. = 1.28$) is the strongest of the influencing factors on choices of international education, when compared with the other influencing factors from family. Family expectation ($M = 3.51$, $S.D. = 1.31$) is also one of the strong familial influencing factors on Thai students' choices of international education. Furthermore, the results indicate that competition among family members ($M = 2.03$, $S.D. = 1.31$) is the least influencing among all five factors.

Regarding the relationship between influencing factors and choices of international education, the results indicate that all five influencing factors are positively associated with the decision to study abroad, choice of country, city, academic course, and university, as presented in Table 3.

Table 3. Correlation between Choices and Influencing Factors

Choices*Types of Influence	ρ	Mean (σ)	R^2
Family Finance			
Decision to study abroad* Family Finance	0.577*	3.51 (1.35)	0.33
Choice of country* Family Finance	0.353*	3.38 (1.31)	0.12
Choice of city* Family Finance	0.268*	3.02 (1.33)	0.07
Choice of academic program* Family Finance	0.163*	2.77 (1.42)	0.02
Choice of university* Family Finance	0.157*	2.77 (1.35)	0.02
Family Information			
Decision to study abroad* Family Information	0.696*	2.68 (1.42)	0.48
Choice of country* Family Information	0.633*	2.69 (1.38)	0.40
Choice of city* Family Information	0.619*	2.64 (1.37)	0.38
Choice of academic program* Family Information	0.501*	2.33 (1.30)	0.25
Choice of university* Family Information	0.522*	2.33 (1.29)	0.27
Family Expectation			
Decision to study abroad* Family Expectation	0.651*	3.16 (1.36)	0.42
Choice of country* Family Expectation	0.476*	2.94 (1.31)	0.23
Choice of city* Family Expectation	0.457*	2.83 (1.30)	0.21
Choice of academic program* Family Expectation	0.366*	2.61 (1.36)	0.13
Choice of university* Family Expectation	0.347*	2.54 (1.31)	0.12
Family Competition			
Decision to study abroad* Family Competition	0.791*	2.15 (1.35)	0.63
Choice of country* Family Competition	0.726*	1.96 (1.19)	0.52
Choice of city* Family Competition	0.670*	1.88 (1.15)	0.45
Choice of academic program* Family Competition	0.647*	1.92 (1.19)	0.42
Choice of university* Family Competition	0.659*	1.93 (1.22)	0.43
Family Persuasion			
Decision to study abroad* Family Persuasion	0.812*	2.14 (1.32)	0.65
Choice of country* Family Persuasion	0.795*	2.11 (1.32)	0.63
Choice of city* Family Persuasion	0.729*	2.12 (1.33)	0.53
Choice of academic program* Family Persuasion	0.633*	1.88 (1.16)	0.40
Choice of university* Family Persuasion	0.651*	1.86 (1.19)	0.42

* $p < 0.01$

Finance

The results indicate an overall positive relationship between financial support from family and five choices of international education: the decision to study abroad ($\rho=0.577$, $p<0.01$), choice of country ($\rho=0.353$, $p<0.01$), choice of city ($\rho=0.268$, $p<0.01$), choice of academic program ($\rho=0.163$, $p<0.01$), and choice of university ($\rho=0.157$, $p<0.01$). The range of the coefficient of determination (R^2) is 2-33 per cent shared variance, which means there is not much overlap between financial support from family and Thai students' choice of international education. The mean scores indicate that among five choices of international education, family financial support has a strong impact on Thai students' decision to study abroad (instead of at home) and choice of country. In contrast, it has the least impact on choice of academic program and university.

Information

The results indicate an overall positive relationship between informational influence from family and five choices of international education: the decision to study abroad ($\rho=0.696$, $p<0.01$), choice of country ($\rho=0.633$, $p<0.01$), choice of city ($\rho=0.619$, $p<0.01$), choice of academic program ($\rho=0.501$, $p<0.01$), and choice of university ($\rho=0.522$, $p<0.01$). The range of the coefficient of determination (R^2) is 25-48 per cent shared variance, which means there is moderate overlap between information influence from family and Thai students' choices of international education.

The mean scores indicate that among five choices of international education, family financial support has a strong impact on Thai students' decision to study abroad (instead of at home), choice of country, and city. In contrast, it has the least impact on choice of academic program and university.

Expectation

The results indicate the moderate positive relationship between expectation from family and five choices of international education: the decision to study abroad ($\rho=0.651$, $p<0.01$), choice of country ($\rho=0.476$, $p<0.01$), choice of city ($\rho=0.457$, $p<0.01$), choice of academic program ($\rho=0.366$, $p<0.01$), and choice of university ($\rho=0.347$, $p<0.01$). The range of the coefficient of determination (R^2) is 12-42 per cent shared variance, which means there is moderate overlap between family expectation and Thai students' choice of international education. The mean scores indicate that the expectation from Thai family has a strong influence on Thai students' decision to study abroad but it has the least impact on choice of university.

Competition

The results indicate the moderate positive relationship between competition among family members and five choices of international education: the decision to study abroad ($\rho=0.791$, $n = 803$, $p<0.01$), choice of country ($\rho=0.726$, $p<0.01$), choice of city ($\rho=0.670$, $p<0.01$), choice of academic program ($\rho=0.647$, $p<0.01$), and choice of university ($\rho=0.659$, $p<0.01$). The range of the coefficient of determination (R^2) is 42-63 per cent shared variance, which means there is moderately high overlap between familial competition and Thai students' choices of international education. The mean scores indicate that the expectation from Thai family has a strong influence on Thai students' decision to study abroad but it has the least impact on choice of city.

Persuasion

Regarding the relationship between the persuasion from family and Thai students' choices of international education, the results indicate a moderate positive relationship between choices and family persuasion: the decision to study abroad ($\rho=0.812$, $p<0.01$), choice of country ($\rho=0.795$, $p<0.01$), choice of city ($\rho=0.729$, $p<0.01$), choice of academic program ($\rho=0.633$, $p<0.01$), and choice of university ($\rho=0.651$, $p<0.01$). The range of the coefficient of determination (R^2) is 40-65 per cent shared variance, which means there is moderately high overlap between family persuasion and Thai students' choices of international education. The mean scores indicate that the expectation from Thai family has a strong influence on Thai students' decision to study abroad. On the other hand, it does not have a strong impact on students' choice of university.

DISCUSSION

The analysis of Thai students' choices of international education reveals that Thai students in Australia made different choices prior to the final decision to enrol in a particular institution. Thus, the results elucidate that the choice of international education is not a one-step decision-making process. Each choice consists of complex processes and can be influenced by various factors. The study also indicates that there are different levels of correlation between Thai students' five choices of international education and five types of influencing factor from family.

The results indicate that the correlations between the decision to study abroad and five influencing factors from family (finance, information, expectation, competition, and persuasion) are highly correlated. Furthermore, the mean scores indicate that the five influencing factors significantly impact on the decision to study abroad. Thus, this study confirms that the decision to study abroad (instead of at home) is the most important choice for Thai students. On the contrary, the results show that the correlations between Thai students' choice of university, academic program and five

familial influencing factors are low. The mean scores confirm that the family members do not highly influence Thai students' choices of academic program and university. The qualitative findings (from Study 1) explain that, for Thai students, choices of international academic course and university are more 'personal choices' than the other choices of international education. Therefore, students have more freedom to make both choices.

Finally, the study indicates that stakeholders involved in the global marketing of Australian education should be aware of various factors that impact on students' choices of international education. As the international education market evolves, protagonists involved in the marketing of Australian education ought to better understand international students, in order to sustain the strong position of Australian education services in the global market.

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Perceptions of Being International: Differences between British Adolescents Living Abroad and those at Home

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British adolescents living in Hong Kong and British adolescents living in the United Kingdom formed the two samples of adolescents who completed Hayden, Rancic and Thompson's (2000) 32-item instrument. Instead of following the original authors' approach to the analysis of the instrument, a more comprehensive technique was adopted. The data were first factor analysed to reveal new factor structures that were different from those in the original instrument. Subsequent MANCOVA and ANCOVA found that there were comparative differences in all of the new variables between the British expatriate adolescents and local British adolescents. The differences found in this study are concerned with international awareness, international mobility, flexibility, respect for others and national identity that British expatriate adolescents believed were the factors of being international.

International student, adolescents, expatriate, living abroad, factor analysis,
Hong Kong, United Kingdom

INTRODUCTION

Traditionally, those who go overseas on business tend to be single and predominantly male (Aryee, Chay and Chew, 1996; Borstorff, et al., 1997), but increasingly, overseas assignments are becoming a popular career move for female executives (Chusmir and Frontczak, 1990). Therefore, there is also an increase in the number of expatriate executives who take their family members on assignments with them as most of the suitable expatriate candidates are married and have children (McCoy, 1986; Regan, 1994; Sievers, 1998). This research study focuses on the children of these business expatriate families who have been largely overlooked in business expatriate research and even in educational research. They are only just starting to emerge as a point of interest (de Leon and McPartlin, 1995; Gerner and Perry, 2000; Gerner, et al., 1992; Hayden, Rancic and Thompson, 2000; Useem, 2001).

The study of people with experiences and backgrounds in multi-cultural settings has been an interesting one. Debate over whether such multi-cultural experiences and backgrounds should have any effect on an individual's life has generated much discussion in previous literature. Some researchers have pondered about the differences by studying the immigrants' home culture and the new culture that they have resided in (Park, 1928; Stonequist, 1935). Other researchers have seen this as a matter of process and that eventual adaptation of the new culture is seen to replace the old one (Green, 1947; Golovensky, 1952). However, opinions have changed over time and it is generally agreed that people who have experience of living in a different culture for a period of time have developed different attributes and behaviours (Useem, 2001). The current research

looks at the needs of children of business expatriates and the need to include these results in the literature (Gerner and Perry, 2000; Gerner et al., 1992; Hayden, Rancic and Thompson, 2000; Useem, 2001).

Useem (2001) describes children who are the accompanying members of internationally mobile families as 'third-culture kids'. In general, this definition portrays the children of families who are working overseas on corporate assignments, but the term has also been applied to military and missionary families stationed in foreign countries. Research on expatriate children has provided examples of their ability to adapt to new cultures. These children appear to possess the special skills and multi-cultural abilities to handle their everyday interactions with other people whether they are from different cultures or not. They are claimed to have preferences arising from their international mobility such as the desire to travel and foreign language ability (Gerner, et al., 1992; Gerner and Perry, 2000; Hayden, Rancic and Thompson, 2000; Sampson and Smith, 1957; Useem, 2001). These assertions are not speculation as many of the current researchers in this field, including ourselves, have had similar multi-cultural experiences and some researchers had even observed such traits in their own children (Gerner and Perry, 2000).

Third-culture kids are described as individuals who have spent a significant part of their adolescent years in cultures other than the culture of their parents; developing a sense of belonging to all of the cultures they have been exposed to while not claiming full ownership to any of them (Fail, 1996). A typical anecdote would depict these adolescents as having a curious 'cultural marginality', which describes an individual living at the edges of two or more cultures, never really understanding those cultures but experienced enough not to offend anyone from any of them (Bennet, 1993; Kerckhoff and McCormick, 1955; Park, 1928; Schuetz, 1944; Siu, 1952; Stonequist, 1937).

RESEARCH QUESTION

The general exposure to other cultures together with the expatriate adolescents' normal period of development should endow these young people with cultural and behavioural frames of references from all the cultures that they have been exposed to. This would, in effect, result in the expatriate adolescents being more culturally aware than their peers who were brought up in a single culture (Bennet, 1993; Stonequist, 1935; Useem, 2001). Expatriate adolescents may take into consideration all the values of the cultures that they have been exposed to before taking any action that is a general compromise for the parties concerned. It may be hard for expatriate adolescents to agree and commit to any one course of action as their international experience has taught them that they must refer to their specially developed frames of references to seek a course of action so that no one is offended (Bennet, 1993; McCaig, 1991; Schaetti, 1999). With this in mind, we believe that expatriate adolescents should be able to develop a special mental capacity as a result of being international.

Hayden, Rancic and Thompson (2000) discovered that expatriate adolescents studying at international schools do differ in their assessment of their perceptions of being international more than their international school teachers. The bulk of the literature used American adolescents in the studies of third-culture kids (Gerner, et al., 1992; Useem 2001). However, we have not found any reported studies that investigated perceptions of being international that focussed on British adolescents living abroad. Therefore, in this study we intend to investigate British adolescents living in an overseas location and those living in the United Kingdom. The results of this study should be able to answer our principal research question.

Do British expatriate adolescents develop a different perception to being international than their peers at home?

METHODS OF RESEARCH

Instrument

Many of the investigations on expatriate adolescents seem to be somewhat simplistic in their design (de Leon and McPartlin, 1995; Gerner et al., 1992; Hayden, Rancic and Thompson, 2000; Useem, 2001). They take the form of observations and qualitative reports, as many of them are exploratory studies (Useem, 2001). Further, some researchers have attempted a quantitative approach with psychometric instruments in the form of a questionnaire (Gerner, et al., 1992; Hayden, Rancic and Thompson, 2000). This study uses the original instrument developed by Hayden, Rancic and Thompson (2000) which has nine dimensional subscales: (a) international experiences, (b) parental factors and type of institution attended, (c) second language competence, (d) neutrality, (e) open-mindedness, (f) attitude towards other value systems and culture, (g) attitude towards own values systems and culture, (h) respect for others, and (i) tolerance of the behaviour and views of others.

The randomised order of statements was adopted from the original Hayden, Rancic and Thompson (2000) instrument. To maintain the original instrument's psychometric properties, there was rewording of only two statements. In addition, some explanatory words were supplied that had similar meanings in order to help the respondents understand difficult words or phrases in the statements.

The questionnaire used a five-point Likert-type scale ranging from (1) 'strongly agree' to (5) 'strongly disagree'. The instruction, "*In order to be international it is necessary ...*" as a guide to what to think about when answering the instrument was placed at the beginning of the list of items of the instrument in bold type and in a larger font.

The instrument used in this study to measure the perception of being international was constructed by Hayden, Rancic and Thompson (2000). It used an indirect method of questioning that projected the statements to a third-party rather than asking the respondents directly. This form of indirect questioning is called structured projective questioning (Fisher, 1993) and offered a glimpse into the hidden crevices of their (respondents') soul (Weschler, 1951). This meant that the answers or responses given were the actual psychological beliefs of the respondents (Fisher, 1993). Therefore, by using indirect questioning, we were actually probing the degree of the adolescents' perception of being international that provided an insight of how strongly international experiences affected their frame of reference.

Location

Hong Kong was a British colony for more than a century and a half. Its social structure and economy developed separately from mainland China so that even when Hong Kong returned to Chinese control in 1997 the colony was promised autonomy for another 50 years. The education system in Hong Kong is similar to the British system with primary, secondary and higher education, and all public institutions are funded to some extent by the Hong Kong Government. All children must attend public schools until they reach the third year of secondary school when they have a choice of continuing their education, joining a vocational course or leaving school. Education spending was 55.3 billion Hong Kong dollars in 2001/02 representing 19 per cent of the total of the Hong Kong Government's spending (Information Services Department, 2002). However, despite this spending, the language standards, both English and Chinese, have dropped over the last decade (Standing Committee on Language Education and Research, 2002).

Sample

Convenience sampling was used whereby two groups of British adolescents were selected for this research. The demographic breakdown of these two groups is shown in Table 1. There were responses from 63 British expatriate adolescents living in Hong Kong. In this group there was a total of 51 (81%) males and 12 (19%) females, their mean age was 14.1 years old (s.d.=1.6). They had lived in Hong Kong for a mean period of 35 months. Also, 28 of British adolescents in Hong Kong had lived in other countries as well. To avoid possible confusion only those who were born in the United Kingdom were included in the sample studied in Hong Kong.

Table 1. Demographics

Demographic Factors		British Expatriate Adolescents, n=63	Local British Adolescents, n=88
Place of Birth	United Kingdom	63	88
Gender	Male (%)	51 (81%)	26 (30%)
	Female (%)	12 (19%)	62 (70%)
Average Age in Years (s.d.)		14.11 (1.63)	14.66 (1.41)
Average Months in Hong Kong		33.8	
Lived in Other Countries (%)		28 (44%)	

The second group of respondents were British adolescents selected from several locations in the United Kingdom. A total of 88 respondents was used in the analysis, and only respondents born in the United Kingdom who had never lived abroad were included. There were 27 (31%) males and 63 (69%) females in this groups whose mean age was 15 (s.d.=1.4) years old.

RESULTS

Factor analysis

Instead of simply summing-up the items and comparing the means item-by-item as the original authors did, our analysis was more rigorous. The data set was analysed with SPSS (Statistical Package for Social Science) v.10 for Windows. The factor structure showed the relationships between the manifest and latent variables. The resultant latent variables were the basis for the research findings.

The whole data set was analysed initially using principal components factor analysis. The extracted components were then rotated orthogonally using the Varimax rotation procedure (with Kaiser normalisation) to show the hypothesised factor structure (Merenda, 1997). The result of the factor analysis is shown in Table 2 displaying each of the new factor's core components and corresponding Cronbach's alpha. The factor analysis revealed six factors with Eigenvalues greater than 1.0 and item loadings of greater than 0.40 on relevant factors. Factor analysis accounted for 69.6 per cent of the variance, which is considered high (Kerlinger, 1986). Barlett's test of sphericity was highly significant (3411, $p < 0.001$) and the Kaiser-Meyer-Olkin measure of sampling adequacy was 0.91, which is more than satisfactory (Hair et al., 1995).

Descriptive statistics and correlations

The descriptive statistics for the five latent variables are shown in Table 3. The magnitude of the correlations is found to be generally high indicating a potential multi-co-linearity problem. However, the results of our factor analysis indicate that the variables are distinct and our findings are therefore not entirely attributable to method variance.

Table 2. Factor analysis component matrix for Perceptions of Being International

Items	Loading	Alpha
Factor 1: International Awareness		0.94
not to feel my culture is superior to others.	0.74	
to be willing to try to find a pathway through an issue which does not offend people of any culture.	0.73	
to be willing to cooperate with other people.	0.70	
to be prepared to observe the cultural conventions of others when in their presence.	0.70	
to be aware of the cultural conventions of people from other parts of the world.	0.67	
to mix with people from other cultures rather than just live alongside them.	0.64	
to tolerate the views of others even though I do not agree with those views.	0.63	
to accept that all people have the right to express their views freely.	0.60	
to read newspapers and books from other cultures (either in their original language or in translation).	0.58	
to encourage others of different cultures to learn about my own culture.	0.55	
not to identify strongly with one culture	0.54	
to be prepared to have my personal opinions challenged.	0.54	
to be informed about people from other cultures.	0.54	
Factor 2: International Mobility		0.88
to have lived in more than one country.	0.74	
to have traveled in a number of countries.	0.73	
to be interested in what happens in other parts of the world.	0.60	
to be able to speak to more than one language fluently.	0.58	
not to be narrow minded.	0.53	
to be prepared to compromise over my own views.	0.51	
Factor 3: Flexibility		0.83
not to have any strong views of my own.	0.78	
to attend an international school/college.	0.71	
to have parents who are 'internationally minded'.	0.63	
to tolerate the behaviours of other people even though I find that behaviour completely unacceptable.	0.59	
to challenge preconceptions of others of different cultures.	0.58	
to be prepared to change my opinions about an issue.	0.56	
Factor 4: Respect for Others		0.81
to accept the rights of other people to put their views into practice within their own society, even though such practice would be unacceptable within my own society.	0.80	
to respect another person's viewpoint, even though if I totally disagree with it.	0.64	
to tolerate the views expressed by others even though I find those views completely unacceptable.	0.61	
to be more interested in the individual and his/her personality than in which his/her culture is from.	0.46	
Factor 5: National Identity		0.54
to have parents who are not both of the same nationality.	0.80	0.37 i.i.c.
not to identify strongly with one national system.	0.56	

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalisation.

Alpha: Rotation converged in 13 iterations.

i.i.c.: inter-item correlation

Table 3. Descriptive statistics and correlations of the five new variables

	Mean	s.d.	1	2	3	4	5
1. International Awareness	2.02	0.67	1.00				
2. International mobility	2.12	0.82	0.79**	1.00			
3. Flexibility	2.72	0.78	0.62**	0.68**	1.00		
4. Respect for Others	2.19	0.66	0.74**	0.61**	0.52**	1.00	
5. National Identity	2.88	0.80	0.37**	0.52**	0.47**	0.40**	1.00

** Correlation is significant at the 0.01 level (2-tailed).

Sample differences

Using analysis of variance (ANOVA), statistical significant differences were found between the two groups of British adolescents in terms of the background variables age and gender (Table 4).

Since the developing characteristics and traits of adolescents may be associated with either or both of these background variables (Neilsen, 1996; Newman and Newman, 1997), they can be used as covariates in the further analysis of the two adolescent groups.

Table 4. Sample differences

	Mean (s.d.)		Univariate <i>F</i> -ratio
	British expatriate adolescents, n=63	British home (UK) adolescents, n=88	
Sex (1=male, 2=female)	1.19 (0.40)	1.69 (0.46)	48.6**
Age	14.11 (1.63)	14.67 (1.41)	5.1*

** $p < 0.001$, * $p < 0.01$

Analysis

A summary of the five-by-two multivariate analysis of covariance (MANCOVA) and analysis of covariance (ANCOVA) is shown in Table 5. There is an overall significant effect between the two groups of adolescents ($F=29.1$, $p < 0.001$) and we also found significant differences are reported for each of the variables between the groups ($p < 0.001$).

Table 5. Summary MANCOVA and ANCOVA analysis

	Mean (s.d.)		Multivariate Effect	Univariate <i>F</i> -ratio
	British expatriate adolescents, n=63	British home (UK) adolescents, n=88		
			29.11***	
1. International Awareness	1.56 (0.43)	2.37 (0.60)		71.98***
2. International Mobility	1.47 (0.44)	2.55 (0.65)		100.78***
3. Flexibility	2.08 (0.49)	3.18 (0.60)		97.97***
4. Respect for Others	1.79 (0.44)	2.48 (0.64)		48.11***
5. National Identity	2.50 (0.63)	3.17 (0.78)		18.91***

*** $p < 0.001$

DISCUSSION OF RESULTS

1. International Awareness

There are 13 items that formed this variable giving a Cronach alpha (α) of 0.94 (Nunnally, 1978). This latent variable, reveals what 'being international' is all about. The formulation of this variable comes from the expatriate adolescents' understanding that multi-cultural awareness and the acquisition of further cultural knowledge contributes to being international.

Items such as 'not to feel my culture is superior to others' and 'not to identify strongly with one culture' form the basic idea behind being international and multi-cultural awareness. There has been a general consensus among writers that expatriate adolescents who have been exposed to cultures other than their own in an overseas setting may develop cultural values and traits that were neither for nor against any of the cultures that they had experienced, including their own (Minami, 1993; Nagao, 1998; Schaetti, 1999; Sutherland, 2000; Useem, 2001). The exhibition of cultural neutrality by the expatriate adolescents might have arisen from the fact that holding strongly to their own cultural values would get you nowhere in a different or multicultural setting like Hong Kong. This culturally neutral awareness might have developed when expatriate adolescents entered a new country, a new social environment, or perhaps a new school. To make new friends from other cultures would have involved the additional sensitivity of not openly commenting to others about their customs or way of dress, for example. Therefore, cultural neutrality was an integral part of international awareness, and it was an admittance of not complying wholly to a person's own or any other cultural values, but rather being more receptive towards other people and their culture (Bennet, 1993).

The second part of the international awareness variable comes from the expatriate adolescents' understanding that the way to develop cultural knowledge is by being international. Sample items are 'to read newspapers and books from other cultures (either in their original language or in translation)' and 'to be informed about other cultures'. It is believed that the British expatriate adolescents felt that an appreciation of the knowledge gained from other cultures helped them to develop, support and maintain an international stance and outlook (Hayden, Rancic and Thompson, 2000; Useem et al., 2001).

There were four items which factored on this variable that are also noteworthy: 'to be willing to cooperate with other people', 'to tolerate the views of others even though I do not agree with those views', 'to accept that all people have the right to express their views freely', and 'to be prepared to have my personal opinions challenged'. It was thought that these items showed signs of the students' ability to be cooperative, to be tolerant, and show sound moral reasoning. Adults might find these abilities to be part of their knowledge base that might be used regularly. Indeed these abilities had been developed in most adults from late adolescence, but the British expatriate adolescents had a mean age of 14.1 (s.d.=1.6) years, and they were between their early and middle adolescent period of development where these abilities had not yet fully developed (Neilsen, 1996; Newman and Newman, 1997). It was believed that these expatriate adolescents developed these abilities ahead of their peers and the only rational explanation was that the expatriate adolescents' had international exposure (Pollock and Van Reken, 1999).

2. International Mobility

Six items contributed to this latent variable with an acceptable reliability of 0.88 (Nunnally, 1978). The items showed that some obvious aspects of international movement and travel might contribute to being international. Examples are (a) 'to have lived in more than one country' and (b) 'to be able to speak more than one language fluently'. The sample of British expatriate adolescents could almost be described as seasoned expatriates with 44 per cent of them having lived in other countries outside of the United Kingdom and Hong Kong. However, in the business expatriate literature, at least, the amount of previous international experience did not appear to affect or prepare someone for an international move (Selmer, 2002), but the evidence presented suggested that these British expatriate adolescents certainly think that it did.

This finding might not be contradictory, but is supplementary instead. The business expatriate literature refers to findings about adults who had fully developed cultural values and behaviours, however, expatriate adolescents had not developed these behaviours (Neilsen, 1996; Newman and Newman, 1997). Rather, adolescents as a whole were *tabula rasa*, a blank slate, and could absorb new cultural information very quickly (Muss, 1968). International travel may have prepared these British expatriate adolescents to be open to new international and cultural contacts as there are two items indicating that openness was needed in international mobility; 'not to be narrow minded' and 'to be prepared to compromise over my own views'. The understanding of these abilities is important, (a) not to generate a stereotypical image of the place or the people (Sampson and Smith, 1957; Stuart, 1992); and (b), to be able to examine new perspectives that were respected abilities even in adults. Also, the British expatriate adolescents in the sample would seem to have developed a desire for international news and information and to learn other languages fluently to support being international and their desire for international mobility.

3. Flexibility

This latent variable contained six items from the factor analysis and had an acceptable reliability of 0.83 (Nunnally, 1978). Flexibility in being international, as described by the British expatriate adolescents in this study, is thought of first as mental flexibility or flexibility in the ways of thinking. This can be seen in the items 'not to have any strong views of my own', 'to tolerate the

behaviours of other people even though I find that behaviour completely unacceptable', and 'to be prepared to change my opinions about an issue'. This is reflected in anecdotal evidence (McCaig, 1991; Minami, 1993; Schaetti, 1999; Sutherland, 2000), but has rarely been recorded statistically.

Second, international flexibility could be promoted by having parents with an international outlook, 'to have parents who are 'internationally-minded''. In general, adolescents did not mix well with their parents during this important developmental stage of their lives, but the British expatriate adolescents in this study seemed to think that parental input contributes to their flexibility in being international much more than their peers back home do. The reason for this parental and family harmony might be due to the fact that these expatriate families needed to be mutually supportive especially when going to live in a new and different country. This idea is supported by the research of Schaetti (1999), Stuart (1992), and Sutherland (2000). In the first few months of an international move, when all family members, were trying to get settled, it might be necessary to share new experiences with other family members. Another contribution to international flexibility came from attending an international educational institution, 'to attend an international school/college'. Most of the British expatriate adolescents living in Hong Kong seem to attend an international educational institution of one kind or another. The expatriate adolescents might feel that these institutions are able to give them international flexibility because these educational institutions typically contain a varied selection of expatriate adolescents. An international school in Hong Kong might have students from more than 16 countries. In effect, a typical school day in one of these institutions may be likened to visiting 16 countries in just one day (de Leon and McPartlin, 1995; Kanno, 1996; Kumagai, 1977). This argument lent support to Hayden, Rancic and Thompson's (2000) and Hayden and Thompson's (1997) general finding that international school children found that attending international institutions contributes to their being international.

4. Respect for Others

Four items gave this variable an acceptable reliability of 0.81 (Nunnally, 1978). There were three items that included accepting, respecting and tolerating other people's views. A typical item was 'to accept the rights of other people to put their views into practice within their own society, even though such practice would be unacceptable within my own society'. Rather than just acknowledging differences, the variable suggested that British expatriate adolescents felt the actual acceptance and tolerance of the differences between cultures and people were important to being international. To respect others certainly showed positive signs of acceptance but toleration is a little more ambiguous since to tolerate might mean that some one was being forced to accept the views or opinions of others. As ambiguous as it might be, to tolerate might be better than an unconsidered acceptance of the differences between cultures and people. It was thought that these British expatriate adolescents felt that to tolerate might actually involve a process from initial encounter to accepting the differences, and in between, the expatriate adolescents may challenge their own values or understanding of the matter and form a better perspective of it for the future. Again, the ability to reason is certainly a trait that older adolescents might have developed properly (Neilsen, 1996; Newman and Newman, 1997), but the average British expatriate adolescent in this study were still in their early or middle adolescent, suggesting that international living encourages them to develop these qualities faster than their home counterparts.

The final item in this latent variable points to being interested in the actual person rather than their cultural heritage. It is a rather revealing that British expatriate adolescents appeared to have developed a 'world-mindedness' attitude in their interactions with other people. The expatriate adolescents saw through the national or cultural veneer of the individuals they were talking to and saw people as they really were. In fact, when the expatriate adolescents were approached to fill in the questionnaires and were asked if they were British, some of them had to stop and think before

they replied, “*I’m originally from England, but I’ve been in Hong Kong (or another place overseas) a long time...*” It seems that these British expatriate adolescents wanted others to see them not as belonging to a single place but as world-minded people belonging to the world (Sampson and Smith, 1957).

5. National Identity

Two items that formed this latent variable were, (a) ‘to have parents who are not both of the same nationality’ and (b) ‘not to identify strongly with one national system’. This variable had a Cronbach alpha of 0.54 but since Cronbach’s alpha was, to some extent, a function of the number of items, Nunnally (1978) suggests that the inter-item correlation (*i.i.c.*) is a better measure of reliability for two-item factors. In this case the *i.i.c.* is 0.37.

The British expatriate adolescents might think that they did not need to rely on or be identified with one culture or nationality. Similarly, the expatriate adolescents could try to prove that singularity of origin may even be a barrier to being international. From the discussion of Variable 4. *Respect for Others*, the British expatriate adolescents in this study felt that it was hard to describe where their place of origin was. Many authors have described the problem of identity and attributed it to the confusion that young people might experience when they are brought up in a mixture of cultures (Gerner, et al., 1992; Kanno, 1996; Kumagai, 1977; McCaig, 1991; Minami, 1993; Nagao, 1998; Sampson and Smith, 1957; Schaetti, 1999; Sutherland, 1999; Tsai, Ying and Lee, 2000; Useem, 2001). However, it was felt that this might not completely explain the situation. Expatriate adolescents might want people to know about their international abilities and their so-called ‘internationalness’ rather than just being associated with the nationality that was on their passports. In general, adolescents wanted to stand out, and in order to be exclusive with a so-called ‘in-crowd’, this sample of British expatriate adolescents might have wanted just that. The only thing that would really set them apart was their cross-cultural abilities (Useem, 2001). Furthermore, having parents of different nationalities definitely would provide many international benefits, such as, cultural mixing, multiple language familiarity, and food variety. Perhaps, this might also be the reason expatriate adolescents thought that having internationally minded parents also contributed to being international.

Variable 6

The sole item that loaded to form this factor was ‘to be prepared to defend my own value system to those who do not share it’. Unfortunately, since single-item variables are often poorly defined and unreliable it was decided not to discuss this factor, nor include it in the analysis so that a parsimonious solution could be retained from the factor analysis (Saranga and Knezevic, 2000; Scher, 1997; Tabachnick and Fidell, 1989; Tiffany, Carter and Singleton, 2000).

Limitations

One limitation of this study is that only one national group of adolescents is investigated in a single host location. Since Hong Kong is a modern metropolis that offers more contemporary conveniences than other places, this may have introduced some bias to the investigation. It would be rather interesting to see whether data collected from a location lacking the modern amenities available in Hong Kong would yield similar results. In addition, the approach to the data collection in this study might be biased since it is done with a self-report questionnaire. However, the general condemnation of self-reporting methods is found to be over-exaggerated (Crampton and Wagner, 1994). The fact that an indirect method of questioning is used that projects the statements to a third-party to obtain actual psychological beliefs reduces the social desirability bias (Fisher, 1993). Nevertheless, it is desirable to reduce any problems of method bias by arranging the items of the instrument randomly to remove the problem of respondents’

dependence on a cognitive set of rules when evaluating items intended to measure constructs that are supposed to be conceptually different (Lord and Maher, 1991).

It was necessary to use a convenience sample and cross-sectional analysis in this study. Convenience samples may have produced data with ensuing statistical limitations (Ackoff, 1953), but the use of convenience samples could be justified in exploratory investigations such as in the current study (Ferber, 1977; Frankel and Frankel, 1987; Smith, 1983). The cross-sectional nature of this investigation might have made the causal inferences doubtful and a longitudinal study over a period of time with improved investigative control might have produced a far more convincing result (Menard, 1991). However, the fact is that longitudinal studies on the whole are expensive and take much more time and commitment from the respondents involved. Further, business expatriate executives and their families usually stay in a foreign location for only a limited time, making the choice of an appropriate method of investigation particularly limited.

Implications

One obvious implication that can be inferred from these results is for large multi-nationals or institutions with global interests to consider older expatriate adolescents as a credible source for their international human resources. These expatriate adolescents may constitute ideal business executives to be sent on foreign assignments, especially with their international perceptions already molded and shaped from living abroad in other cultures. This experience alone already qualifies many business expatriate candidates since organisations can only provide their candidates with cross-cultural training in the artificial setting of lectures and simulations (Gudykunst, Guley and Hammer, 1996) that often yields dubious results (Black and Mendenhall, 1990; Deshpande and Viswesvaran, 1992; Selmer, 2002).

It suggests that educational institutions should bear in mind the special abilities that these expatriate adolescents may have developed and should encourage the nurturing of these qualities. Educational institutions such as international schools and colleges should generate a curriculum that supports and encourages such international perspectives in expatriate adolescents, and indeed in all their students, expatriate or not. However, at the moment, it seems that teachers in these international educational institutions are not particularly in tune with the international perceptions of their responsibility, and attention may be needed as to the way in which 'being international' is being portrayed (Hayden, Rancic and Thompson, 2000). Careful attention is needed to help expatriate adolescents understand their multi-cultural identities in order for these young people to be able to use their special abilities constructively throughout their lives and not let these abilities become a burden to them (Alvah, 2000; Bennet, 1993; Nagao, 1998; Pollock and Van Reken, 1999; Useem, 2001). Educational institutions in the home culture need to know how to treat returning expatriate adolescents.

Many expatriate adolescents have reported feeling neglected and isolated when they return to their home countries (Alvah, 2000; Cortell and Useem, 2001; Minami, 1993; Pollock and Van Reken, 1999; Useem, 2001). First, students say that the educational establishments do not openly show much appreciation of the usefulness of their international experiences. Second, their peers do not understand or want to share the expatriate adolescents' international experiences. The neglect and isolation adds pressure to the conflicting perceptions of how the expatriate adolescents perceive their international experiences. In some cases, expatriate adolescents seem to prefer to forget about their international experiences and revert to their home culture norms. Others have become reclusive as they are not able to use their international experience (Useem, 2001). Therefore, home educational establishments should provide training for the teachers who supervise these returning expatriate adolescents. Schools may also establish counselling to assist the returnees to retain the specialised international and cross-cultural advantages that these adolescents have gained which may become one of their most valuable assets (Bennet, 1993).

Parents of these expatriate adolescents also need to realise what special children they have and help foster international perspectives in them. Unlike adolescents living in their home country, expatriate adolescents may have replaced the need for peer association with parental support. Certainly, the amount of time being spent with parents increases dramatically when travelling and living in different locations around the world (Stuart, 1992; Useem, 2001). The transitional nature of expatriate adolescents' lives makes it difficult to bond closely with friends of the same age group, but parents are usually present during their travels. Taking advantage of this positive family relationship, parents of expatriate adolescents could support their children's international developments in many ways and simply inquiring more about their experiences is one method. Since parents have become the expatriate adolescents' peer group, the parents are in a position to get closer and know if their children are having developmental problems associated with their international experiences.

CONCLUSION

It is demonstrated in this study that British expatriate adolescents living in Hong Kong have a more varied view than their home country counterparts in terms of being international. The results provide empirical evidence to support previous presuppositions and anecdotal evidence on the distinct characteristics of adolescents with international experience. A rigorously designed empirical investigation is used in this study to enable statistical comparisons to be made between expatriate adolescents and their local peers in the home country. Whereas the previous application of the instrument by its authors used simple means comparisons, the responses to principal components factor analyses were made to identify a statistically valid factor structure for both samples and variables measured.

Finally, the results of this exploratory investigation offer empirical findings on promising expatriate recruitment sources as well as important practical implications that are directly relevant to corporate globalisation. The findings also point to the need for a more careful curriculum design in educational institutions in locations that cater for expatriate adolescents that can help to support international perspectives. There should also be support from educational institutions in home country for returning expatriate adolescents who might feel uncomfortable in the single-culture environment of their home country. Furthermore, parents of these expatriate adolescents should spend more time and effort encouraging their children's sense of being international.

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A Sustainable Cohort of Professional Civil Engineering Graduates? Uncovering the United Kingdom Graduate Crisis

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Undergraduate applications to civil engineering courses have been declining at an alarming rate despite the industry's healthy economic activity. Concerns abound as to the long-term impact of this decline as the sector is already suffering skills shortages across virtually all of its occupations. This paper investigates the likely future trends in undergraduate admissions to civil engineering degree courses based on an analysis of Universities and Colleges Admissions Service (UCAS) statistics for the period 1994 to 2000. The analysis reveals that applications have sharply declined over this period from 5,104 in 1994 to 2,905 in 2000. This trend is then modelled using a bivariate quadratic and cubic model equations to determine the volume of future applications. With an R^2 of 0.99 and a mean absolute percentage error of less than one per cent, the model appears to be robust and reliable. By contrasting graduate intake with sector turnover, the paper explores whether any significant correlation exists between market buoyancy and the attractiveness of a professional civil engineering career. Model forecasts over a six-year period suggest that applications will continue to decline, albeit at a slower rate. The likely causes and implications of the trends are discussed and measures proposed to stem the decline in popularity of civil engineering degree courses.

Graduate shortages, forecasts, manpower planning, civil engineering, United Kingdom

INTRODUCTION

There has been a rapid expansion in the numbers of students entering Higher Education (HE) over the last decade in the United Kingdom. Between 1994 and 2000 the number of applicants accepted into HE courses rose by over 20 per cent (UCAS, 2002). These quoted figures are broadly in line with the Government's widely publicised target of a 50 per cent increase in HE participation for 18 to 30 year olds by 2010 (DfES, 2003). However, while the trend in HE participation and growth continues, the future looks less optimistic for civil engineering. Despite the growth in admissions to degree courses generally, the number of applications and entrants to civil engineering courses have declined at an alarming rate over the same period. Indeed, it has recently been forecast that construction degree courses could face extinction within ten years if the present rate of decline continues (Clark and Nikkah, 2003).

Against this backdrop, this paper explores whether concerns over falling applications to undergraduate civil engineering courses are justified or merely based upon conjecture. A secondary analysis of UCAS admissions data is presented, from which a predictive model is developed which forecasts the likely numbers of future enrolments. Based upon model predictions, conclusions are drawn as to the likely severity of the undergraduate skills crisis in the medium term. In addition, suggestions are proffered as to how the profession can begin to address its apparent current unpopularity as an undergraduate discipline.

THE DECLINE OF CIVIL ENGINEERING UNDERGRADUATE ADMISSIONS

Byfield (2001) explored entrant figures for undergraduate admissions to civil engineering courses for the period 1996 to 2001. Byfield's analysis illustrated the fluctuating popularity of civil engineering courses since 1966, followed by an unrelenting downward decline in terms of the numbers of home applicants accepted on to both degree and HND courses since 1993. Since 1997, a decline in the numbers of overseas and EU applicants accepted to United Kingdom courses has also been apparent. Byfield's alarming findings are supported by anecdotal accounts and speculative industry reports. For example, according to the *New Civil Engineer* (2002a), 72 per cent of United Kingdom universities' civil engineering courses are effectively unviable, 27 per cent of civil engineering graduates do not join the industry upon graduation, and in the last five years, applications have fallen by 32 per cent and acceptances by 29 per cent. Indeed, almost 70 per cent of United Kingdom civil engineering departments say they have severe to critical problems recruiting students to their courses (Mylius, 2002). More pessimistic projections have even suggested that if the current decline is maintained, there will be *no* applications for United Kingdom civil engineering degree courses by 2007 (see Soudain, 2001).

The shortage of construction graduates is by no means restricted to the civil engineering sector. Cavill (1999) for example reported on the paucity of quantity surveying graduates entering the industry in 1999 in comparison to the early 1990s. She found that for some courses, the number of applications had declined by almost 75 per cent. Dainty and Edwards (2003) reported on the decline in applications to building construction courses within the United Kingdom. Their forecast predicted that the building sector is ill-equipped to cope with expected future demand. Indeed, in his recent review of research and innovation in the industry, Fairclough (2002) commented on the delimiting effect that falling undergraduate admissions could have on the future development of the construction industry. He commented that

...there has been a dramatic decline in the numbers of new entrants on construction-related degree courses. If the current rates of decline were to continue into the future, the number of students in the built environment would rapidly collapse. By 2009 the number of applicants to civil engineering courses would have fallen to 0, while the last applicant to building and construction courses would enter university by 2012. So far, the declining trend line shows little signs of bottoming out. (Fairclough, 2002)

THE IMPLICATIONS OF THE DECLINE IN POPULARITY OF CIVIL ENGINEERING DEGREE COURSES

Construction Industry Training Board (CITB) forecasts indicate that approximately 14,000 managerial and clerical staff and 4,500 construction professionals will be required each year up until 2006 in order to account for the forecasted market expansion (CITB, 2002). The low numbers of undergraduate entrants into the industry raises fundamental questions as to whether these levels (that is, those cited by the CITB) will be achieved and hence, the likely future prosperity of the civil engineering profession. In the short-term, the sharp decline in admissions could force employers to recruit from other engineering disciplines, or even retrain non-cognate graduates in order to meet their labour requirements. Furthermore, as competition increases for the

dwindling numbers of graduates that are available, increasing pressure will be exerted upon construction firms to either raise the starting salaries of those who are available and provide additional employment incentives. Indeed, United Kingdom civil engineering graduate salaries have already increased dramatically in recent years as the civil engineering industry skills shortage has taken effect (Hansford, 2001).

The longer-term impact and severity of the marked decline in recruitment to undergraduate civil engineering courses remains uncertain. However, most reports and industry commentators suggest that it will negatively effect the future competitiveness and capacity of the industry. For example, the water, road, railways and nuclear energy sectors have all expressed concerns that without the rapid injection of suitably equipped personnel, consultants and contractors will fail to cope with future workload (Mylius, 2001). Falling numbers of civil engineering students are expected to militate against the ability of consultants and clients to gear up for the massive transport growth that is expected over the next decade. This could in turn undermine the Government's delivery of its 10-year transport plan (Oliver, 2000). The decline in the popularity of civil engineering courses could also impact on the industry's need to improve its performance in line with the demanding targets set out within the *Accelerating Change* reports (Strategic Forum, 2002).

Surprisingly, Byfield's (2001) analysis of admissions statistics also reveals that the quality of entrants has actually improved in recent years. Byfield found no evidence of falling standards measured by the entry qualifications of United Kingdom undergraduates since 1996. This finding is contrary to other reports on the quality of civil engineering undergraduates, where concerns abound of falling standards and the increased efforts having to be used by academic departments to address them. For example, according to one recent report, three in 20 students are failing to complete courses (half of whom drop out because they cannot cope with the workload or subject matter) and some 96 per cent of civil engineering departments say that students' grasp of mathematics is inadequate (New Civil Engineer, 2001a). Thus, the wider implications of the declining enrolment to civil engineering courses currently remains uncertain.

THE NEED FOR FURTHER ANALYSIS

Doubts must remain as to the sustainability of a profession that is witnessing a year-on-year decline in its graduate intake, particularly given the concurrent growth in the sector's output over this period. The industry is currently experiencing its best period of sustained economic growth since the late 1980s, with recent figures illustrating that construction industry output has increased some seven per cent in the year up to the third quarter of 2002 (Construction Forecasting and Research, 2003). There is now an imperative need to establish whether such growth is sustainable given the industry's recruitment difficulties and market buoyancy. Accurate forecasting of skills shortages in civil engineering could give the industry's competitiveness a better long-term outlook (Hibbert, 1999). Such knowledge would allow the industry and its professions to target its recruitment activities more appropriately in the future.

Although the reporting of rudimentary statistics have demonstrated a steady decline in civil engineering applications and enrolments since the early 1990s, a predictive model for forecasting the likely severity of the decline has yet to be developed. Such a model could inform the civil engineering profession, its employers and university departments of the likely future severity of the decline, and therefore help to promote the *prima facie* case for taking drastic action to arrest the impact of such. In pursuance of this aim, this paper presents an analysis of university admissions statistics and uses these data to develop a predictive model for forecasting the likely severity of future graduate shortfalls. To put this decline into context, the analysis is compared with civil engineering economic output over the same period. By contrasting graduate intake with sector turnover, the paper explores whether there is any correlation between market buoyancy and the attractiveness of a professional civil engineering career.

Further, more exhaustive, commentary on the current situation is provided by a desegregation of male and female enrolments to civil engineering courses over this period. Subsequent analysis of these dichotomous groups sought to establish whether initiatives to attract women to the engineering professions have had any impact in addressing the current paucity of civil engineering graduates. In total, these analyses should prove valuable in understanding the severity of the graduate shortage issue and moreover, establish the potential reasons for the decline in recent years.

METHOD OF INQUIRY

In order to explore trends in application and admissions to civil engineering degree courses, data were collected from the University Central Admission System (UCAS) of applications and enrolments to all building degree courses under the 'H2' classification (civil engineering). Data are presented for a seven-year period from 1994-2001. This reflects the period for which such statistics have been collected by a single admissions body, thereby ensuring the consistency of the figures presented. Data for 1994-2000 were used for the model building and analysis process, while applications data for 2001 were held back and used the test predictions made, for that year. The use of a hold out sample allows the model's accuracy and robustness to be tested.

Having collected reliable student application data, a two-stage analysis process commenced. The first stage involved summary statistical analysis and manipulation of the data in order to explore and report upon any obvious trends that help to select an appropriate modelling technique. Data manipulation was required to produce a so-called 'relative movement' of student applications; the underlying trend when compared to micro economic activity. To achieve this, each year's cohort of students was transposed into a relative index, where the base year (1994) had a value of one. To facilitate a reliable comparison to be made, total civil engineering output (billions of Euro at 1998 prices) were also converted into a relative index. Next, the data collected in the first stage were used to develop accurate models that would facilitate reliable predictions to be made. These were then tested using the mean percentage error (MPE) to determine the accuracy of predictions made for the series used. The forecast for 2001 was then tested using the hold out data and a measure of predictive accuracy made. Model predictions would then allow the following hypothesis to be tested:

United Kingdom civil engineering degree courses are in decline as observed by the reducing number of undergraduates attending courses despite consistent micro economic activity.

THE SIGNIFICANCE OF THE DECLINE IN CIVIL ENGINEERING ADMISSIONS

The number of applications to 'civil engineering' courses for the years 1994 to 2000 is shown in Table 1. The findings show a significant decline in the number of students applying for and entering civil engineering degree courses; from 5,104 applicants in 1994 down to 2,905 applicants in 2000. This represents an alarming 57 per cent reduction in the value recorded in 1994. Disaggregating these figures by sex reveals that this observed reduction in student applications has not been totally consistent across both sexes (see Figure 1). The number of women choosing a civil engineering career has fallen steadily from 587 in 1994 to 415 in 1999, albeit there has been a slight recovery in 2000 with 438 applications being recorded. Conversely, the trend for men is more alarming as the number of applicants has plummeted from 4,507 in 1994 to 2,467 in 2000. In 2000, applicants for men accounted for only 64 per cent of those applying in 1994.

Thus far in the analysis, the recorded trend in student applications has shown an apparent reduction. However, the magnitude of this reduction must be measured in relation to the trend in civil engineering output if its true significance is to be established. This is because it is reasonable to hypothesise that applications would be positively correlated with industry demand (and thus

output). Figure 2 presents the relative index of civil engineering output and student applications over the given period 1994 to 2000. This reveals a somewhat paradoxical trend in that as civil engineering output has increased, student applications have decreased substantially. To quantify this apparent relationship, Pearson’s product moment correlation coefficient (r) was used, and shows a strong negative correlation ($r = -0.65$).

Table 1. Key statistics for Civil Engineering (CE)

Year	Male CE		Female CE		CE Applicants		Total CE Output	
	No.	Index	No.	Index	No.	Index	billions Euro*	Index
1994	4,507	1	597	1	5,104	1	13.82	1
1995	3,957	0.87	581	0.97	4,538	0.88	13.41	0.97
1996	3,638	0.80	569	0.95	4,207	0.82	14.09	1.01
1997	3,224	0.71	542	0.90	3,766	0.73	14.79	1.07
1998	2,939	0.65	503	0.84	3,442	0.67	14.40	1.04
1999	2,665	0.59	415	0.69	3,080	0.60	14.21	1.02
2000	2,467	0.54	438	0.73	2,905	0.56	14.41	1.04

* billions Euro at 1998 Prices, 1 Euro = 0.6776

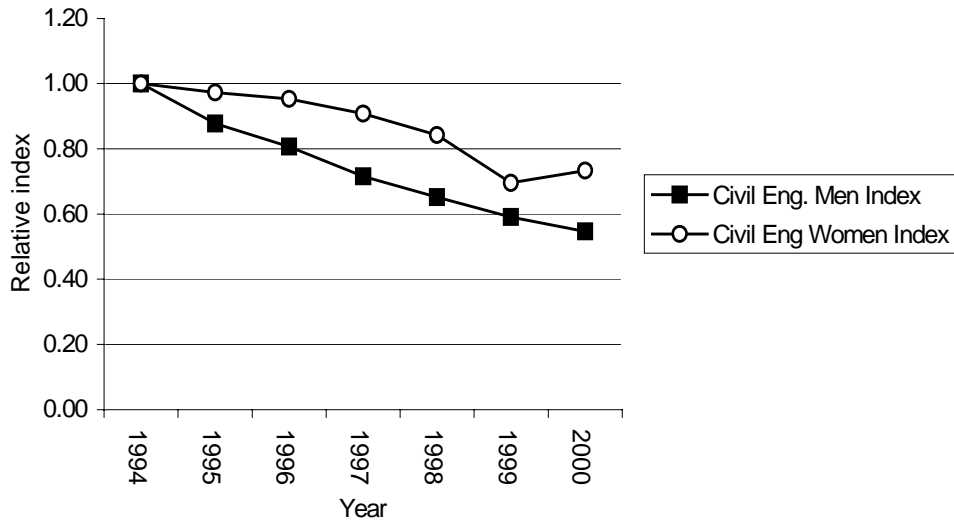


Figure 1. Men vs. Women Applicants

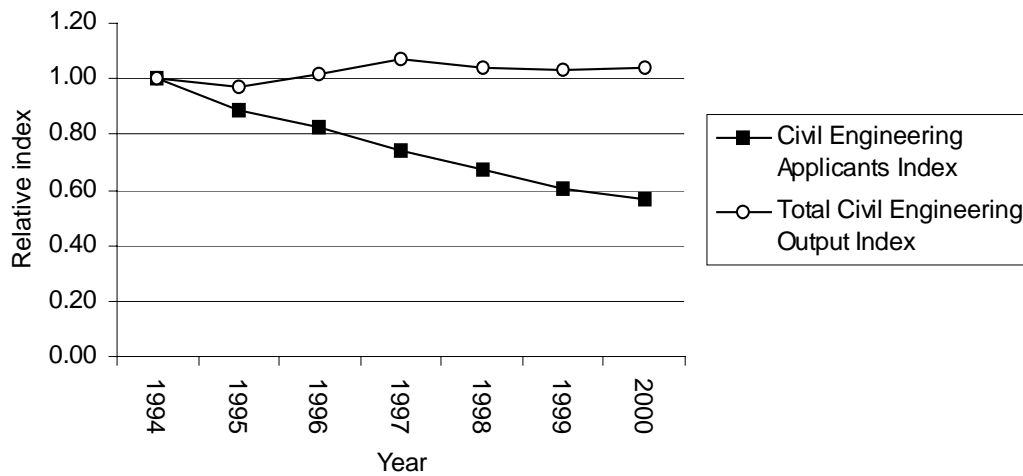


Figure 2. Applicants vs. Output

Modelling of the decline in civil engineering admissions

Previous work conducted by Dainty and Edwards (2003) revealed that the accuracy of the model *per se* was not sufficient to determine a reliable and robust model equation given the limited data available. Dependent upon the data collected, it is possible for the trend to be modelled accurately (in terms of R^2) and yet produce forecasts that are inappropriate and contrary to the trend. To overcome this inherent difficulty with time series analyses, two techniques were employed: the cubic and the quadratic model equations.

Cubic modelling equation

Post preliminary data analysis, data contained within Table 2 was used to model and subsequently, forecast the future trend in civil engineering degree applications. Using the cubic model equation, a good fit of the data was achieved (as demonstrated in Figure 3). The model equation was expressed mathematically as:

$$Y = b_0 + b_1t + b_2t^2 + b_3t^3 + e$$

The model derived was expressed as:

$$Y = 5598.00 + -533.45(t) + 16.2143(t^2) + 0.6667(t^3)$$

Where b_0, b_1, b_2, b_3 are regression coefficients and e is an error term.

Table 2. Model Output

Cubic Model Equation				
Year	Actual Students	Predicted Students	Residual (Error)	MAPE (%)
1994	5104.00	5081.42	22.57	0.44
1995	4538.00	4601.28	-63.28	1.39
1996	4207.00	4161.57	45.42	1.07
1997	3766.00	3766.28	-0.28	0.00
1998	3442.00	3419.42	22.57	0.65
2000	3080.00	3125.00	-45.00	1.46
2001	2905.00	2887.00	18.00	0.61
Mean Average				0.80
Quadratic Model Equation				
Year	Actual Students	Predicted Students	Residual (Error)	MAPE (%)
1994	5104.00	5085.42	18.57	0.00
1995	4538.00	4597.28	-59.28	0.01
1996	4207.00	4157.57	49.42	0.01
1997	3766.00	3766.28	-0.28	0.00008
1998	3442.00	3423.42	18.57	0.00
2000	3080.00	3129.00	-49.00	0.01
2001	2905.00	2883.00	22.00	0.00
Mean Average				0.00

To determine the accuracy of the model developed, the R^2 and Mean Absolute Percentage Error (MAPE) (Table 2) values were reported. At 0.998 and less than 1 per cent respectively, the model is proved to be both a valid and reliable predictor of student applications.

Using the cubic model developed, a forecast for the next five years was derived viz:

2001: 2,709.46

2002: 2,596.33

2003: 2,551.63

2004: 2,579.35

2005: 2,683.51

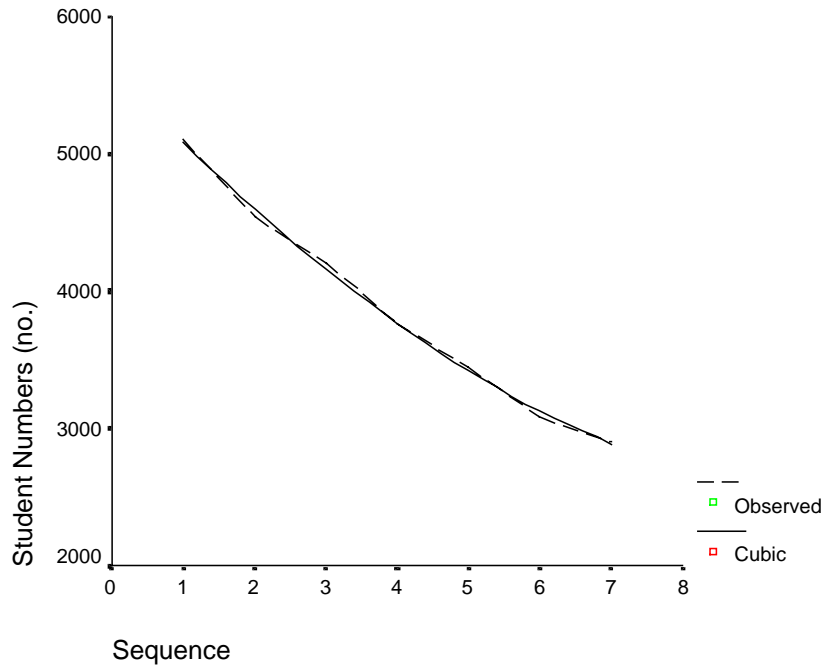


Figure 3. Cubic Model Fit

At this juncture the predicted values seem to remain largely static; albeit there is a slight recovery forecasted for 2004 and 2005. To determine whether this finding is valid, a quadratic model equation was also used to model the data, as shown in Figure 4.

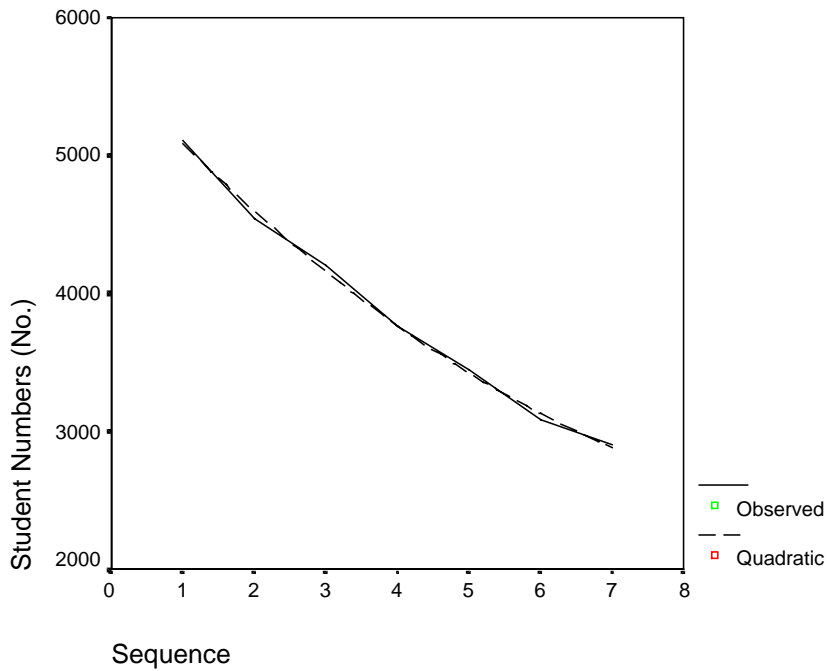


Figure 4. Quadratic model fit

Quadratic modelling equation

The quadratic equation can be expressed mathematically as:

$$Y = b_0 + b_1t + b_2t^2 + e$$

The model derived was expressed as:

$$Y = 5,622.00 + -560.79(t) + 24.2143(t^2)$$

With an R^2 and Mean Absolute Percentage Error (MAPE) value at 0.998 and less than 1 per cent respectively, the model is proved to be an equally valid and reliable predictor of student applications. Using the quadratic model developed, a forecast for the next five years was derived viz:

2001: 2,685.39

2002: 2,536.24

2003: 2,435.53

2004: 2,383.24

2005: 2,379.37

These five values point towards a further gradual reduction in student applications.

Model validation

There is great synergy between both the cubic and quadratic models, in that performance analysis outputs (R^2 and MAPE) are identical. Furthermore the expected change in student applications is not expected to rise significantly over the next two years. Consequently, either modelling equation could be used to produce a reliable forecast. Regardless of the model equation used, the shortage of civil engineering graduates is expected to continue (see Figure 5).

Additional validation work was undertaken by measuring the accuracy of the prediction for the year 2001 to confirm the reliability of the forecasts made. In 2001 2,484 applications were recorded. This figure represents an 8 per cent deviation (approximately) from the prediction forecast for that year. Predictions to within 10 to 15 per cent of the samples are acceptable and prove model reliability (Edwards and Griffiths, 2000). This suggests that the predictions made are both reliable and robust, in spite of the relatively limited number of years for which data were available and on which the models and predictions were based.

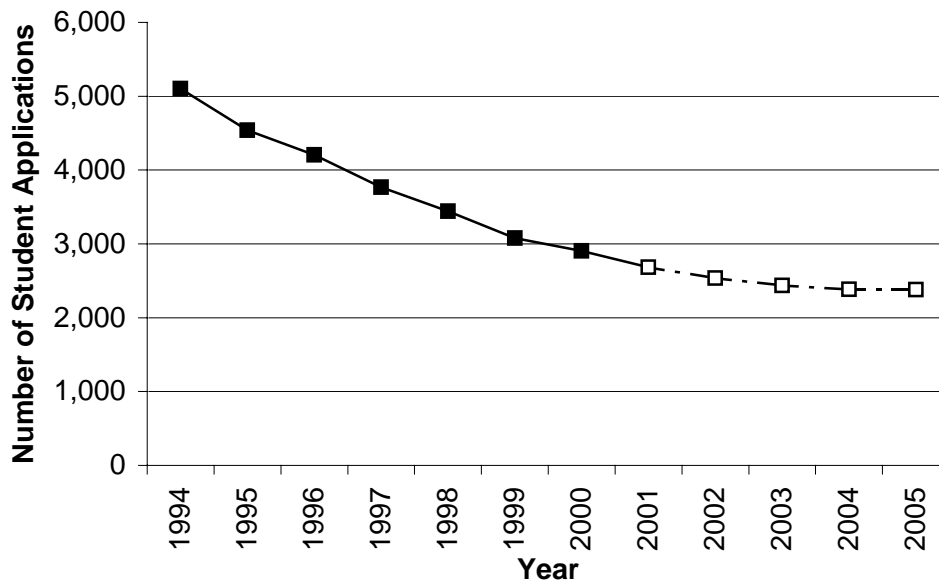


Figure 5. Plotting the quadratic model forecast

DISCUSSION

The preceding analysis provides little in the way of optimism for the civil engineering profession. Despite the industry's sustained growth forecasts for the next few years, forecasts generated by this research suggest an impending recruitment crisis for graduate civil engineers in the medium term (2 to 5 years). Although these findings are alarming in themselves, the situation is likely to be further exacerbated by graduates who decide not to embark upon a civil engineering career upon graduation. For example, civil engineering graduates are often targeted by the comparatively higher paying financial and insurance sectors, which value their analytical education as a foundation for a financial career (Byfield, 2001).

On the basis of the trends identified, it is reasonable to suggest that the declining popularity of the civil engineering profession could impact upon the industry's future development and therefore, effect its future capacity and capabilities in the face of increasing foreign competition. An immediate and obvious implication is likely to be a marked increase in graduate salaries as firms compete for a decreasing cohort of able graduates. Simultaneously, those experienced professionals who are already employed within the sector may be poached by competitor firms who may offer greater fringe benefits and remuneration packages. Spiralling employment linked to tight labour market conditions are ultimately likely to impact upon the cost of civil engineering projects (Agapiou et al, 1995).

There are a plethora of potential reasons as to why the civil engineering profession fails to attract and retain graduates. However, the most significant are likely to relate to the sector's image and its working practices. The industry has a fundamental image problem in attracting high quality school leavers, and especially women and ethnic minorities (Sommerville et al., 1993; Centre for Ethnic Minority Studies, 1999). Construction has an image synonymous with high cost, low quality, chaotic working practices and a poor record for health and safety (Ball, 1988). Engineering job titles have been shown to evoke a fairly low-grade image amongst many lay people (Newman, 1998). In terms of the working environment, the inherent pressures placed upon those working within the industry are known to lead to considerable stress and to the unattractive nature of the sector. Key factors include transient working, low pay, poor working conditions, an unpopular and unprofessional image of the industry and a lack of employment continuity (see Lingard 2003). According to the *New Civil Engineer* (2002b), 75 per cent of engineers feel overworked and 82 per cent feel undervalued. This has resulted in 64 per cent having considered leaving the industry in the last year while 53 per cent actively seek a new position.

Stemming the decline in undergraduate enrolments requires that the civil engineering profession aligns itself with the current moves to improve the future skills prospects of the industry. The CITB migrated towards a more proactive approach dealing with construction skills shortages (Barrie, 1998). These include new advertising campaigns and the National Construction Week initiative, which is now run as an annual industry promotional event. Some civil engineering firms have independently initiated schools recruitment and sponsorship programs to solve their recruitment problems (Cole, 2002).

Non-cognate graduates, who derive from non-civil engineering first-degree disciplines, offer an increasingly necessary potential source of new entrants to the sector. Other sections of industry, such as building construction, have already adopted this approach in order to benefit from a sustainable source of the best graduates. However, this strategy is fraught with problems in that training costs are relatively high, the students' commitment to the industry cannot be guaranteed and while not insuperable, attracting them to the industry has proved problematic. In addition, the entire strategy relies upon industry practitioners offering attractive graduate starting packages comparable to rival professions (for example, law and accountancy). Perhaps unsurprisingly, support has not been widely apparent throughout the civil engineering sector. Given the relative

increase in female applications to the civil engineering courses, another possible idea would be to target resources on non-traditional groups as potential entrants to the profession. Women and ethnic minorities in particular offer a significant untapped resource, and so a possible so-called feminisation of the profession may offer a realistic solution to the industry's recruitment crisis. Such a strategy may also help to improve the poor image of the sector and the careers within it.

CONCLUSIONS

Despite its fundamental significance to the future prosperity of the profession, little statistical analysis has been carried out to explore the severity of the downturn in applications to civil engineering degree courses. Accordingly, this paper has presented an analysis of applications and admissions data with the aim of establishing whether reports of falling numbers and course closures reflect a genuine long-term recruitment crisis for the profession, or merely isolated examples of declining admissions within certain HE institutions. By predicting future trends in graduate recruitment and reconciling these against industry growth forecasts, it has identified whether the current recruitment crisis is likely to impact on the industry's ability to continue to improve its performance.

Based on current projections, the intake of undergraduate students currently entering construction courses will be insufficient to meet the demand over the next few years. The corollary of this is likely to be a future scarcity of civil engineering graduates in the future, and hence, difficulties in recruitment, rising salary levels and perhaps even the threat of foreign competition. Thus, based on the analysis presented, the decline in applications to civil engineering degree courses should be of serious concern to all industry stakeholders.

The civil engineering profession has a proud heritage of providing for the infrastructure needs of the United Kingdom, without which other sectors would not survive and prosper. However, the industry now faces an alarming dilemma in that while an increase in output is apparent, professional candidates, equipped with suitable degrees, are not being attracted to the industry. It is apparent that further reductions in student applications are to be expected, and so immediate action is therefore required to arrest the current trends for the sake of the future prosperity of the industry. These actions should centre on the promotion of the profession as an attractive career, especially to those groups currently underrepresented who provide the greatest potential pool of new entrants. It seems clear however, that the profession has an uphill task if it to reverse the declining interest in civil engineering degree courses.

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A Boy's Secondary School Changes to Coeducation

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In this paper, factors that influence academic achievement and self-concept of Year 12 students in their final year of schooling at a Catholic co-educational school in Adelaide, Australia were investigated. The study hypothesised there were differences in attitudes and academic performance due to prior schooling experiences, sex, home experiences, peer influences and school policy and practices.

The Self Description Survey (SDQ111) and aggregate results from four Year 12 assessment points were used in order to collect data. The data were examined using the specific statistical approach of effect size and correlational analysis. A focus on differences between those students who had previously had single sex schooling from those who had coeducational experiences over a five-year period found that difference existed with the scales of the SDQ111, particularly the Religion, Physical Appearance, Parent, Opposite Sex and General scales. Similarly there were clear sex differences noted on some of the 13 scales of the SDQ111 favouring the boys on the majority of these scales. One other factor of interest involved Parent Occupation. Evidence found that the parent's level of occupation was significantly related to academic achievement.

Single-sex education, coeducation, self-concept, academic achievement, boys, Australia

INTRODUCTION

In recent decades, public attention has been directed both in Australia and overseas to the question of gender differences in education. Within Australia there have been growing concerns about the general restructuring of education, government involvement and spending. The growing numbers of students retained to Year 12 have led to pressure on the education system.

In the 1980s and 1990s, equitable access to education became key features of governmental policy that impacted on growth in school retention rates and greater access to higher education, for both males and females. With this change, specific programs were designed to increase participation of groups marginal to education such as females in the technologies and males within language courses. Inherent in these changes are discussions regarding the value of coeducational and single sex learning environments.

A renewed interest in discussion about educational arrangements for both boys and girls has led to widespread debate in the United States. This has produced recent initiatives particularly with regard to the implementation of single sex classes into coeducational systems and single sex schools changing to coeducation. Wellesley College for Research for Women (1992) stated that in the United States, single sex classes are illegal in public schools with change limited to single sex work groups within coeducational classes. Nevertheless, they report that there is a strong group in the United States that challenges the notion of coeducation as the prime mode of education.

The American Association of University Women (Wellesley College for Research for Women, 1992) stated that in 1997, the Californian Governor (USA) set aside five million dollars to establish ten experimental single sex classes on the sites of existing coeducational middle schools.

A recent publication by Sadker and Sadker (1994), titled, *Failing at Fairness: How America's Schools Cheat Girls*, reports that teachers spend more time disciplining boys in coeducational classes and much less time disciplining girls. Other studies reported that boys did better in competitive environments, while girls preferred smaller, cooperative settings. Sadker and Sadker argued that greater emphasis should be placed on improving coeducational classes so that boys and girls attracted equal attention.

Most primary education in Australia is coeducational, whereas at State level there exists a greater variation in secondary education. Traditionally independent and Catholic secondary schools are single sex (henceforth referred to as SS). However, recent changes have seen more schools in these systems become coeducational (henceforth known as Coed). Most government secondary schools are Coed except for some selective schools that are SS. Australian research reviewed by Gill (1988, p.47) into SS and Coed schooling issues reported that in general a Coed school environment was seen as more desirable and in keeping with an Australian context as the twenty-first century approached.

Important issues are raised in this study, namely, do the structures of single sex or coeducational schools and classrooms shape individuals' actions and influence individuals, achievement, subject selection and self-concept?

In Australia and elsewhere there has been a ground swell of public opinion about the role of females and males in society. The issues raised not only involve questions of leadership in the community, of equity in employment, of work roles, and of a level playing field in domesticity, but also include questions of gender roles in school and higher education. Teese et al. (1995) argued that the complexity of the issues involved was further intensified by consideration of factors such as subject choice and subject selection and perceptions associated with gender stereotypes. While subjects with the greatest vocational potential attracted boys, girls encountered a strongly segmented curriculum that weakened their competitive chances of entering certain courses at the tertiary level. Teese et al. (1995) added that, in particular, girls tended to choose subjects with less coherence such as Biology, Humanities, Business Studies and Person Development rather than mutually supporting subjects such as Mathematics, Physics and Chemistry. Furthermore, subject choice might account for gender differences in academic achievement. Thus, the role of school subjects both provided and selected by students in perpetuating gender differences also needs to be considered.

The school involved in the study, was a Coed Catholic R-12 school with students from Years 7-12 (Senior School) located on a separate campus in Adelaide, South Australia. The Senior School was established in 1967 as a boys' school. In 1971, coeducation was introduced in the Senior classes in Years 11 and 12 and the first girls from Year 12 to sit for their matriculation did so in the same year. Recently since 1996, coeducation was extended to include all classes from Grades R to 12. In the first year, 1996, 90 girls and 391 boys were enrolled in the school, followed by 123 girls and 422 boys in 1997, 170 girls and 429 boys in 1998 and 207 girls and 453 boys in 1999.

The impetus for the transition to Coed status was largely due to economic factors. However, other factors such as educational benefits of a coeducational setting, families wanting their children to attend one school and old scholars seeking a Jesuit education for their daughters contributed to the decision.

An important question arising in this study was to investigate whether students, male or female, coming into the school, from SS or Coed schools, accommodated to the school's climate. The key aspects that were taken into consideration in this study were not only the achievements of the students as assessed by Grade Point Average, Aggregate score, or the SACE examination performance but also the students' self-concept as assessed by the *Self Description Questionnaire* (Marsh, 1990) after four years in the Senior School.

First, the question was asked: Is there a significant difference between boys and girls at the terminal stage of their schooling, being Year 12? Secondly, there was the question: Did the Oldcomers differ significantly from the Newcomers? The Oldcomers were students who were enrolled at the school before or at the beginning of the change. The Newcomers enrolled in the second, third or fourth year of the change but were only classified as Newcomers for the particular year in which they first enrolled at the school.

The following research questions were advanced for this investigation,

1. Do girls respond more favourably to both the Verbal and Mathematics scales than the boys?
2. Do the boys respond more strongly to the Physical Ability, Physical Appearance and General Self-Concept scales than the girls?
3. Do the girls score at a higher level in achievement than the boys?
4. Are father's and mother's occupations related to the educational achievements of the students?
5. Do more years in coeducation in the school under survey lead to higher achievement and higher self-concept?
6. Is there a relationship between the processes operating within the school and the responses of the students with respect to achievement and self-concepts?

The Newcomers were examined further to see if their shortened time period at the school of one, two, three or four years distinguished them from the Oldcomers that had been at the school longer than four years in a Coed setting.

RESEARCH METHOD

Sample

In 1999, in the fourth year of transition from a SS to Coed school, the current Year 12 classes at the school had 89 enrolments with 65 males and 24 females. The number of girls from previous SS schools totalled 20 while the number from previous Coed schooling was four. The number of new boys from SS schools was 8 and, from Coed schools was 18. There were 39 boys who were enrolled at the school's Junior Campus at the time of transition from SS secondary schooling in Year 7 to Coed schooling in Year 8. Therefore the size of the sample was the 89 Year 12 students enrolled in 1999 with no losses arising from non-response to the *SDQ111* and a general questionnaire. Thus the complete population of a year group in a school was surveyed. There existed diverse socio-economic and cultural backgrounds in the Year 12 student group with a large representation of families from non-professional, middle class backgrounds. Figure 1 shows diagrammatically a simple model of the relationships between the predictor variables and achievement.

Variables Identified in this Study

1. Sex is identified in order to examine data for gender differences.
2. Home background is indicated by the father's and mother's occupations according to the six hierarchically ordered categories of the Broom, Jones and Zubrzycki (1968) scale.
3. Religion groups parents' religious affiliation according to either Catholic or other.
4. Type of schooling experienced over time is collected according to single sex or coeducation experienced by the student over a four year period.

5. Self-concept is based on the 13 scales as measured by the *Self Description Questionnaire* (Marsh, 1990).
6. Achievement involved data collected from the Grade Point Average (GPA) and the Aggregate (Agg) four times during the 1999 academic school year. Data from an external assessment was collected at the fourth and final time point.

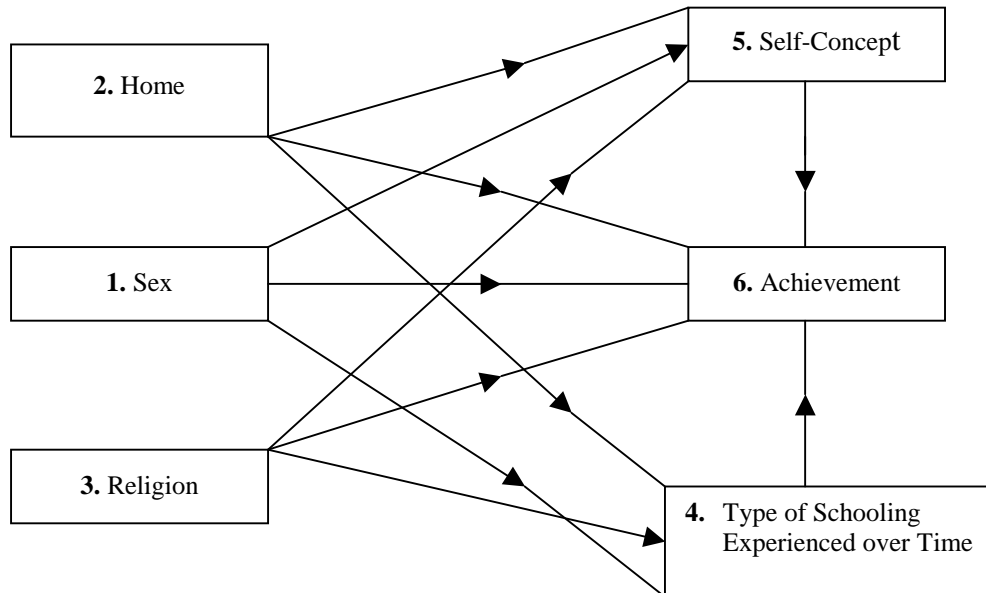


Figure 1. A Proposed Model of the Effects of the Variables

THE INSTRUMENTS USED IN THE STUDY

The SDQ 111 Self-Concept Questionnaire

In summary the *SDQ111* measures self-concept in global and specific areas for late adolescents and young adults. The *SDQ111* is a 136 item self-report questionnaire that measured self-concept using 13 scales which are grouped into three areas of Academic self-concept, Non-Academic self-concept, and a Global self-concept derived from the Rosenberg (1965, 1979) self-esteem scale as presented in Table 1. Users when interpreting the scores are encouraged to consider the specific scales because of their distinct nature rather than an overall or general self-concept.

Table 1. Grouping of the Scales of the *SDQ111*

Academic	Non-Academic	Global
Mathematics	Problem Solving	General - Self
Verbal	Physical Abilities	
General - Academic	Physical Appearance	
	Same Sex Relations	
	Opposite Sex Relations	
	Parent Relations	
	Spiritual Values/Religion	
	Honest/Trustworthiness	
	Emotional Stability	

The *Self Description Questionnaire 111* was administered to the Year 12 students during Term 3. The Questionnaire was self-explanatory for students at the Year 12 level and the instructions for the *SDQ111* were written on the cover page of each instrument. The students were invited but not required, to write their names on the response sheets. Students were further assured that by responding honestly, this would not be harmful to them and would be of positive value. The questionnaires were handed out in a prescribed order.

Father's Occupation (FOCC) and Mother's Occupation (MOCC) Data

A general questionnaire was administered at the time of student's enrolment at the school to the parents of the students and included details of their current occupation that were recorded on a school database. The recorded occupations of the fathers and mothers of the Year 12 students were assigned to six hierarchically ordered categories. These formed a six-point scale classified according to the ordered categories provided in *A Hierarchical Ordering of Sixteen Occupational Groups According to Occupational Prestige* (Broom, Jones and Zubrzycki, 1968). The codes and occupational titles were derived from a two-digit code developed from the Australian Census classification. The 16 occupational groups were assigned to the six hierarchically ordered categories that formed a six-point scale. Table 2 presents the scale values assigned to Father's Occupation (FOCC).

Table 2. Parent's Occupation Scale Values

Professional	6
Managerial	5
Clerical	4
Skilled	3
Semiskilled	2
Unskilled	1
Missing	0

Mother's Occupation (MOCC) was coded in the same way as for Father's Occupation; however, Home Duties were initially coded as 0. Missing data and Home Duties were subsequently recoded as 3.5. The number of responses in each of the categories of the Father's Occupation and the Mother's Occupation scales were recorded in Table 3.

Table 3. Frequencies and Percentages of Father's (FOCC) and Mother's Occupation (MOCC)

Value FOCC	Frequency	Per cent	Value MOCC	Frequency	Per cent
			Home Duties (3.5)	14	15.7
Unskilled (1)	22	24.7	Unskilled (0)	26	29.2
Semiskilled (2)	17	19.1	Semiskilled (2)	5	5.7
Skilled (3)	15	16.9	Skilled (3)	23	25.8
Clerical (4)	4	4.5	Clerical (4)	2	2.3
Managerial (5)	6	6.7	Managerial (5)	9	10.1
Professional (6)	3	3.4	Professional (6)	3	3.4
Inadequately Defined (3.5)	4	4.5	Inadequately Defined (3.5)	1	1.1
Missing (0)	18	20.2	Missing (0)	6	6.7
Total	89	100.0		89	100.0

Academic Achievement Data

During 1999, data were collected at four different times during the academic school year. The first three collection points at the end of each term relied on data collected internally within the school using methods of assessments based on the Senior Secondary Assessment Board of South Australia (SSABSA) with external assessment at the fourth and final point of collection. The Aggregate (Agg) was based on a score out of 100, while the Grade Point Average (GPA) was calculated to assess the overall performance of a student. The GPA was obtained by giving a score out of 20 for each of the subjects studied. These were added together and divided by the number of subjects. The result was a GPA score out of 20. The scores for the GPA and Agg data are not independent, that is, the higher achieving student is likely to obtain a high score on both measures with the Agg matching the GPA.

Oldcomers and Newcomers

The students currently in the school under survey were coded 1. These students were referred to as Oldcomers. Students who came to the school in a particular year were coded 0 and were referred to as Newcomers. These were recorded for enrolments at each year level, from Year 8 to Year 11. The Oldcomers were defined as those students enrolling at the school before or at the beginning of coeducation and the Newcomers were defined as those entering either the first, second, third or fourth year of change but only classified as Newcomers for the particular year in which they enrolled) were recorded for each year at the school.

ANALYSES

In these analyses, correlations and effect size differences (see Cohen, 1988) were calculated for boys' and girls' responses to the *SDQ111*. They were recorded in Table 4. Descriptive statistics of means and standard deviations provide information on the sex differences in the students' responses to the scales of the *SDQ111* that assessed their views in the 13 different areas of self-concept.

Table 4. Sex Differences between the Means, Standard Deviations (SD), Correlations, Effect Sizes and Significance on 13 Scales of the *SDQ111*

Scales	Means		SD		Correlation	Effect Size	Sig p
	Boys	Girls	Boys	Girls			
Mathematics	37.5	39.5	14.5	14.9	-0.06	-0.12	0.6
Opposite Sex	47.4	45.4	12.5	11.6	0.07	0.14	0.5
Parent	46.4	43.5	10.5	11.3	0.12	<i>0.24</i>	0.3
Physical Ability	49.8	36.8	13.4	14.8	*0.39	0.84	*0.0
Physical Appearance	43.7	33.8	12.9	14.3	*0.32	0.65	*0.0
Problem Solving	38.5	35.2	8.7	6.4	0.18	<i>0.38</i>	0.1
Religion	42.0	46.6	17.2	15.3	-0.12	<i>-0.24</i>	0.3
Same sex	38.9	34.3	8.9	9.4	*0.22	<i>0.43</i>	*0.0
Verbal	46.5	45.8	10.5	9.6	0.03	0.06	0.8
Academic	43.0	40.0	11.7	10.3	0.12	<i>0.23</i>	0.3
Honesty	54.5	59.2	12.5	11.0	-0.17	<i>-0.24</i>	0.0
Emotion	43.9	37.6	12.1	13.2	*0.22	<i>0.44</i>	*0.0
General	60.2	50.7	14.1	18.2	*0.27	<i>0.55</i>	*0.0
Number	65	24	65	24	89	89	
Effect sizes	d < 0.2	trivial	(ordinary type)				
	0.2 < d < 0.5	small	(italics type)				
	0.5 < d < 0.8	medium	(bold type)				
	0.8 < d	large	(bold type)				

* statistical significance of correlations and effect sizes with p-values

Since boys are coded '1' and girls are coded '0' in the calculations of the correlations and effect sizes, a positive coefficient indicates the stronger attitudes of the boys and a negative coefficient indicates the stronger attitude of the girls.

Achievement Differences

Table 5 presents information regarding achievement collected at four different times throughout the academic school year in 1999. The means of the boys and the girls are very similar across the various data collection points during the 1999 academic school year with boys being slightly ahead of the girls but not significantly so. The spread of scores is consistent except in the cases of both girls and boys at the end of the school year with the girls' aggregate score (Agg4) and (GPA4) varying slightly more than the boys' aggregate score (Agg4) and (GPA4). With regard to academic achievement there is little difference between the means and the standard deviations of the boys and girls.

Table 5. Correlations and Effect Size Differences between boys and girls on Achievement as measured by Aggregate Score and Grade Point Average

Academic Achievement	Means		SD		Correlations	Effect Size	Significance p
	Boys	Girls	Boys	Girls			
Aggregate1(AGG1)	78.0	77.9	10.0	9.9	0.006	0.01	0.9
Aggregate2(AGG2)	78.5	77.0	10.3	9.8	0.068	0.14	0.5
Aggregate3(AGG3)	78.8	78.1	10.0	10.2	0.033	0.06	0.8
Aggregate4(AGG4)	77.4	77.0	11.1	12.2	0.018	0.04	0.9
GradePointAverage1(GPA1)	15.7	15.6	1.9	2.0	0.013	0.03	0.9
GradePointAverage2(GPA2)	15.9	15.3	2.0	2.0	0.131	0.26	0.2
GradePointAverage3(GPA3)	15.8	15.6	2.0	2.0	0.063	0.13	0.6
GradePointAverage4(GPA4)	15.6	15.4	2.1	2.5	0.034	0.07	0.8
Number	65	24					
Effect sizes	d < 0.2	trivial	(ordinary type)				
	0.2 < d < 0.5	small	(italics type)				
	0.5 < d < 0.8	medium	(bold type)				
	0.8 < d	large	(bold type)				

* statistical significance of correlations and effect sizes with p-values

Generally there are negligible differences between the boys' and girls' academic results, which suggests that coeducation has not had any detrimental effects. However, change data would be needed to establish whether or not this suggestion is sound. It is noted that including sex as a variable with respect to differences in academic achievement in this analysis has confirmed the view that although the boys may be slightly ahead of the girls, there is largely equality between the sexes in their performance in the classrooms of the school. A further point to be made with respect to these results is the noticeably marginal difference between the girls and boys in academic achievement in contrast to some notable differences between the girls and boys on the *SDQ111* scales.

It was decided not to compare the Oldcomers with the Newcomers who came from SS schools or from Coed schools or to compare the Newcomers who were males with those who were females because the numbers were sometimes very small. Consequently the subsequent comparisons as assessed by effect size are restricted to Oldcomers versus Newcomers in order to examine the effects of the changing composition and experiences of the cohort. In interpreting the magnitudes and the directions of the effect sizes it is necessary to recall that (a) the Newcomers in 1995 (Year 8 group) were all boys; (b) the Newcomers in 1996 (Year 9 group) were largely girls; (c) the Newcomers in 1997 (Year 10 group) were largely girls; and the Newcomers in 1998 (Year 11 Group) involved both boys and girls with a small majority of girls. However, the composition of the Oldcomer group changes between the different comparisons.

Thus the table that follows with respect to Year 8, Year 9, Year 10 and Year 11, in effect, records the differences between those students who had longer periods within the school, when compared to those students who had shorter periods, namely Year 8 – 5 years, Year 9 – 4 years, Year 10 – 3 years, Year 11 – 2 years. Since the data were recorded at the end of 1999, all students had at least one year at the school.

Table 6 presents the effect size differences that occur over time in achievement at the Year 12 level. A negative effect size indicates that the Newcomers performed at a higher level while a positive effect size indicates that the Oldcomers perform at a higher level. All effect sizes recorded are positive. The only statistically significant difference in achievement over time at the school in this study is that those students who have been longer at the school up to Year 11 differ from those students who are at the school for a shorter period at Term 4, the last quarter of the year. These effects are indicated with an asterisk.

However, the achievement scores for Term 4 are obtained from the SACE results, while the remaining scores for Terms 1, 2 and 3 are internally assessed scores. Nevertheless, Table 6 shows

the pattern of results indicating that the students who are established in the school, obtain higher marks and grades assigned to them in both the internal assessment and the SACE examinations. This may be a consequence of (a) being familiar with the school's assessment procedures; (b) a 'halo' effect in which the student who is an Oldcomer is better known to the teachers who make the assessments; (c) working better in the classroom through greater accommodation to the school's work environment; or (d) already having a higher level of achievement prior to the beginning of the final year of schooling.

Table 6. Effect Size Differences in Year 12 Achievement over Time

Year of Entry	Agg1 (d)	Agg2 (d)	Agg3 (d)	Agg4 (d)	GPA1 (d)	GPA2 (d)	GPA3 (d)	GPA4 (d)
Year 8	<i>0.32</i>	<i>0.36</i>	<i>0.37</i>	<i>0.28</i>	<i>0.21</i>	<i>0.38</i>	<i>0.37</i>	<i>0.25</i>
Year 9	<i>0.20</i>	<i>0.22</i>	<i>0.29</i>	<i>0.26</i>	0.11	<i>0.27</i>	<i>0.32</i>	<i>0.27</i>
Year 10	0.19	<i>0.22</i>	<i>0.26</i>	<i>0.35</i>	0.07	<i>0.23</i>	<i>0.25</i>	<i>0.36</i>
Year 11	<i>0.25</i>	<i>0.25</i>	<i>0.24</i>	<i>*0.46</i>	0.10	0.17	0.18	<i>*0.43</i>
Effect sizes	d < 0.2	trivial	(ordinary type)					
	0.2 < d < 0.5	small	(italics type)					
	0.5 < d < 0.8	medium	(bold type)					
	0.8 < d	large	(bold type)					

In Table 7 the differences between the Oldcomers and Newcomers in their responses to the 13 scales of the *SDQ111* are shown in terms of effect sizes. Information is given for each intake group so that comparisons could be made over time to test whether there has been a shift in the relative views of the Newcomers with respect to the Oldcomers.

Table 7. Effect Size Difference of Oldcomers and Newcomers by Years of Entry and Attitudes by the SDQ111

Scale	Effect Size					Range
	Year 8	Year 9	Year 10	Year 11		
Mathematics	<i>0.08</i>	<i>0.03</i>	<i>-0.08</i>	<i>-0.15</i>	<i>-0.23</i>	
Opposite Sex	<i>-0.07</i>	<i>0.09</i>	<i>0.22</i>	<i>0.33</i>	<i>+0.40</i>	
Parent	<i>-0.13</i>	<i>0.10</i>	<i>0.25</i>	<i>0.28</i>	<i>+0.41</i>	
Physical Ability	0.50	0.71	0.58	0.51	<i>*0.21</i>	
Physical Appearance	0.62	0.53	<i>0.41</i>	<i>0.27</i>	<i>-0.35</i>	
Problem Solving	<i>0.42</i>	<i>0.35</i>	<i>0.42</i>	<i>0.47</i>	<i>*0.12</i>	
Religion	<i>-0.40</i>	<i>-0.20</i>	<i>-0.14</i>	0.08	<i>+0.48</i>	
Same Sex	<i>0.27</i>	<i>0.46</i>	0.53	<i>0.26</i>	<i>*0.27</i>	
Verbal	<i>0.20</i>	<i>0.09</i>	<i>0.26</i>	<i>0.37</i>	<i>*0.28</i>	
Academic	<i>0.45</i>	<i>0.38</i>	0.63	*0.61	<i>*0.23</i>	
Emotion	<i>0.45</i>	<i>0.43</i>	0.73	<i>0.39</i>	<i>*0.34</i>	
General	<i>0.19</i>	<i>0.43</i>	0.54	<i>0.31</i>	<i>*0.35</i>	
Honest	<i>-0.06</i>	<i>-0.06</i>	<i>0.06</i>	<i>0.15</i>	<i>+0.21</i>	
Oldcomers (N)	39	58	70	78		
Newcomers (N)	19	12	8	11		

Negative sign (-) Newcomers more favourable

Positive sign (+) Oldcomers more favourable

* inconsistent pattern

+ increasing pattern

- decreasing pattern

Significant effect sizes are shown in bold

Effect sizes	d < 0.2	trivial	(ordinary type)
	0.2 < d < 0.5	small	(italics type)
	0.5 < d < 0.8	medium	(bold type)
	0.8 < d	large	(bold type)

Over time the effect size difference has varied more with the Religion, Physical Appearance, Parent, Opposite Sex and General scales as indicated not only by a change in sign but also by a change in magnitude of the coefficients given by the Range in the far right column in Table 7. In three of these cases, namely, Religion, Parent and Opposite Sex scales, the longer the students are

in the school under survey, the greater the difference. However, in the scale of Physical Appearance the reverse occurs with the effect size decreasing over time, while for the General scale there are marked fluctuations.

Influence of Home Background on Academic Achievement

In this study the data for parents' occupation was collected from the school databases and assigned according to six hierarchically ordered categories with the highest level of occupation scored 1 and the lowest level of occupation scored 6. Thus a negative correlation indicates that students from high occupational status homes performed better at school. Table 8 and Figure 2 show the correlations between Mother's and Father's Occupation and Grade Point Average (GPA). Thus Mother's and Father's Occupation would seem to influence the outcome of student achievement as measured by the GPA during Year 12 and shown in Table 8.

Table 8. Correlations and Effect Size By Mother's and Father's Occupation on Academic Achievement measured by the GPA

Variable	GPA1		GPA2		GPA3		GPA4	
	r	d	r	d	r	d	r	d
MOCC	-0.335	-0.71	-0.193	-0.39	-0.259	-0.54	-0.196	-0.40
FOCC	-0.144	-0.29	-0.227	-0.40	-0.301	-0.63	-0.247	-0.51

There were 7 per cent of data missing for MOCC and 20 per cent for FOCC. The largest categories of mothers identified were: unskilled (29%), skilled (26%) and home duties (16%) according to the occupational skill type scale. Whereas the largest categories of fathers identified were: unskilled (25%); followed by semiskilled (19%) and skilled (17%). It is worthwhile noting that the strongest relationship between Mother's Occupation and GPA is for GPA1. However, this changes over time with the influence of the Father's Occupation steadily increasing and the effect of the Mother's Occupation decreasing. A possible explanation may be that at the beginning of Year 12, higher status mothers are more involved and protective of the student's performance at school but, over the year the higher status fathers become increasingly involved. The school reinforces the involvement of each parent during Terms 2 and 3 by requesting that both parents are involved in discussions and interviews regarding academic achievement.

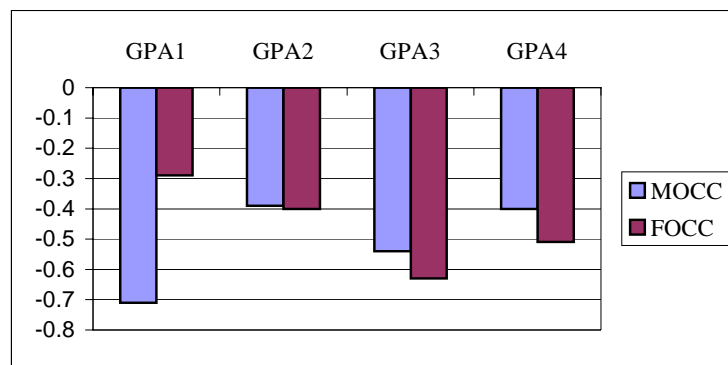


Figure 2. Effect Size by Mother's and Father's Occupation on Academic Achievement in the GPA

With these relatively strong correlations between parental occupation and student achievement, it would seem likely that some of the effects associated with the Oldcomer and Newcomer status of a student would be related to the occupational status of the students' parents. As a consequence some effects might involve the fact that higher status homes might be able to afford the fees for a student to spend all years of schooling, or at least a longer period, in the particular school under investigation.

DISCUSSION

Although this study was limited to an investigation of the academic achievement and self-concept of Year 12 students in their final year of schooling at a Catholic coeducation school in Adelaide, it documented such differences between the sexes in academic achievement and self-concept according to levels of year entry from the period 1995 to 1998. Differences were noted and examined according to relationships with schooling experiences, home experiences, peer influences and school policy and practices.

The results with regard to sex differences and self-concept in this study showed that the polarisation of Mathematics for boys, and girls for the Verbal scale, did not exist. Gender considerations yielded from the results of the *SDQIII* in Table 4 revealed that girls supported an emerging trend with slightly more favourable views of Mathematics while the boys held slightly more favourable views on the Verbal scales. The results of this study indicated a significant relationship between the sex of the student and the *SDQIII* scales of, Physical Ability, Physical Appearance, Same Sex, Emotion and General. In general the boys' views were stronger on the majority of the 13 scales. These findings supported research over the last 20 years confirming that certain scales on the *SDQIII* favoured girls; however, more favoured boys. Marsh (1989) added after testing his differential socialisation hypothesis using longitudinal structural equation models the results suggested that gender differences in these constructs were being reduced. A comprehensive report edited by Keeves (1992) analysed science achievement data collected in ten countries by the International Association for the Evaluation of Educational Achievement (IEA). In this report, Keeves and Kotte analysed Science achievement data collected in 10 countries and suggested caution should be observed when interpreting the effects of sex through attitudes and their influence on Science achievement. Conclusions drawn indicated that this is a complex matter with the sex of the student and attitudes requiring further investigation.

However, with regard to academic achievement the academic results at Year 12 did not support strong gender differences between the sexes. In fact the boys were only marginally ahead of the girls indicating very little difference between the sexes. Caution must also prevail before suggesting that these findings concurred with those of Marsh et al. (1988) and Smith (1994). Therefore, this study found that transition from SS to Coed schooling benefited both boys and girls with no measured academic disadvantages for students attending Coed schools for either sex group. Further data are needed in order to make comparisons between other schools.

With regard to differences between the Newcomers and Oldcomers and academic achievement, the results suggested that the longer the students were at the school in this study, the better the grades and marks obtained by them. As stated previously, this finding could be related to general and academic maturity. Again as with sex differences there were few differences noted in this study with regard to academic achievement between the Newcomers and the Oldcomers.

The pattern of results for the *SDQIII* provides a comparative view between the self-concept of the Oldcomers and the Newcomers. Over time the effect size difference varies more with the Religion, Physical Appearance, Parent, Opposite Sex and General scales. In particular, the longer a student is in the school, change occurs with the effect size increasing between the Newcomers and the Oldcomers with Religion, Parent and Opposite Sex scales with this affirming the positive effects of school policies. However, with the scale of Physical Appearance a different effect occurs with the effect size decreasing. A possible explanation for this may have been a developmental change in attitude for boys and the changing gender pattern with the increase in the number of girls during Years 9 and 10. Marked fluctuations for the General scale are worth examining further. This could be an area for further research. Marsh et al. (1988) cautions against generalising that self-concept is not increasingly differentiated with age, although he found that self-concept increases with age with boys having a modestly higher self-concept than girls.

Generally, from 1996 until 1999 the students' views in the Year 12 group on four of the scales, namely, Opposite Sex, Parent, Religion and Honest had become stronger over the years at the school in the study. These findings supported the view that the school might have positively influenced students' attitudes over time. The longer the student was at the school in the study, the stronger were their views on the scales of Problem Solving, Verbal, Opposite Sex, Parents, Honest and Mathematics when compared to the Newcomers.

One other variable in this study noted as being of importance was the influence of the home background. Teese et al. (1995) hypothesised that differences between boys and girls became more clearly differentiated as the parents were more socially disadvantaged. Evidence was found in this study that the parents' level of education made a significant contribution to achievement. At the beginning of the data points in 1995, the mother's influence appeared more marked. However, as the years progressed from 1995, 1996, 1997 to 1998, the influence of the father increased, supporting the view that parental values and attitudes might directly influence the attitudes and values of these students. It seemed that student achievement might be influenced by parental occupation. However, it might be of interest to further study what particular aspects of parental occupation such as income level, education or professional level or attitudes and aspirations relate to academic achievement.

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Patterns of Moral Reasoning in a Sample of Kuwait University Faculty Members

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An Evaluation of the National Teachers Institute's Manpower Training Program for Teaching Personnel in Mid-western Nigeria

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This study evaluated the manpower-training program for teaching personnel in Mid-western Nigeria by the National Teachers Institute. Overall 240 participants involved in the training program who were randomly selected from the area constituted the sample for the study. A questionnaire designed by the authors was the major instrument used for data gathering. The analyses of the results obtained showed that the programs are fairly effective in upgrading the skills and knowledge of the participants. It was also discovered that the programs have impacted on the level of performance of the participants in the area. It was recommended inter alia that the institute should be adequately funded to enable it achieve its mandate to the fullest. Since the programs are considered relevant to the training needs of the participants, it would be proper to do everything humanly possible to consolidate the gains of the programs.

National Teacher Institute Manpower Training Program, Mid-western Nigeria, questionnaire

INTRODUCTION

Every educational system in any known human society requires highly skilled teaching personnel to sustain it. This explains why the teachers are regarded as the most important element in the school system. It is generally believed that no educational system can rise above the quality of its teachers. Hence training is often organised for teachers to upgrade and update their knowledge and skills. In Nigeria the need for well qualified teachers has gained pre-eminence because it is considered as a means of not only providing them with the necessary skills and knowledge needed to help educate those who could not gain admission into the regular programs but also those who are unwilling to leave their jobs for full-time education and training programs (Imhabekhai, 1998).

Training is conceived as an organised procedure by which people learn and acquire knowledge and skills for a definite purpose (Oyitso, 1997). Nwanchukwu (1990) also sees training as the process of increasing human efficiency through which people are offered the opportunity to acquire new skills and current knowledge required in carrying out various specialised tasks in their place of work. Training and retraining are necessary if efficiency and profits are to be attained. When people are offered training, they acquire new and improved skills and knowledge that will enable them to perform better thereby enhancing their level of productivity. Training and retraining for teachers therefore, is capable of enhancing their level of performance and also enabling them to cope with the ever-increasing challenges of educating the mass of the people in the country (Woghiren, 1997).

Since the early 1980s the Nigerian education system has witnessed an unprecedented increase in population. The major challenge that has continued to agitate the minds of educational planners, administrators and the government has been how best to cope with the increasing population of students as well as provide well-qualified teaching personnel that would help empower the individual students through the acquisition of knowledge and skills and would enable them to participate fully and actively in nation building (Imhabekhai, 1999/2000). It was in response to this challenge that the Federal Government in 1976 through Act No.7 established the National Teachers Institute (2001, 2002). The enabling Act mandated the institute to *inter alia*:

- provide refresher and upgrading courses for teaching personnel;
- organise workshops, seminars and conferences;
- conduct examinations;
- carry out research; and
- formulate policies and initiate programs that would lead to the improvement in the quality and content of education in the country.

The overall goal of the institute therefore, was to uplift the quality and quantity of teaching personnel in Nigeria through training and retraining programs (Omoruyi, 2001). The institution was thus expected to provide courses of instruction leading to the development, upgrading and certification of teachers as specified in the relevant syllabus using a distance education approach or technique. The Institute's distance learning programs cover the entire country and are managed through field centres located in each of the 36 states including the Federal Capital Territory. The headquarters is located in Kaduna. The policies and guidelines of operation are issued from the headquarters.

In pursuance of its mandate, the Institute has initiated training and training programs for helping unqualified primary school teachers and also refresher courses in the teacher training colleges. Recently, the Institute also embarked on the Nigeria Certificate in Education (NCE) program through a Distance Learning System (DLS). The Institute also provides training for the Pivotal Teachers Training Program (PTTP) by means of a distance learning system. The PTTP was introduced in 2002 as a means of producing teachers to fill the gap in teacher supply for the newly introduced Universal Basic Education (UNBE) program of the Federal Government.

In Mid-western Nigeria, the Institute has its study centres located in some secondary schools in the area. The schemes have been in operation in the area since 1987 apart from the Pivotal Teachers Training Program, which commenced in 2002. Many teachers have been encouraged to take advantage of the opportunity offered by the Institute to upgrade and update their skills. In spite of this, it has been observed that many teachers in Mid-western Nigeria are yet to benefit from those programs provided by the National Teachers Institute.

This study was therefore inspired by the desire to determine how effective the training program had been in helping to uplift the quality and quantity of teaching personnel in Mid-western Nigeria. In view of the above, this study was designed with the following objectives:

- a) to determine if the activities of the institution or training programs offered were relevant to the teaching manpower needs of the area;
- b) to find out if the Institute encounters any constraints in seeking to realise its objectives;
- c) to ascertain if the programs provided are effective; and
- d) to ascertain if the programs have impacted on the performance of teachers in the area.

Based on the focus of the study the following research questions were raised to guide the study.

1. Are the NTI training programs relevant to the teaching manpower needs of mid-western Nigeria?
2. What are the major constraints to the Institute's efforts in seeking to realise its mandate?
3. How effective are the Institute's program?
4. Is there any relationship between the training programs provided by the Institute and teachers level of performance?

METHODOLOGY

The population for this study comprised participants in the National Teachers Institute manpower training programs in Mid-western Nigeria.

The sample for the study comprised 240 participants selected from the Institute's Nigeria Certificate in Education (NCE), the teacher Training Grade Two Certificate (TCII) and the Pivotal Teacher Training Program (PTTP). The breakdown shows that 80 participants each are in the final year of their training across the three programs. The sample size was selected using a simple random sampling procedure. The choice of this group of participants was based on the fact that they have spent some time in the program and so are in a position to assess the program as well as ascertain its impact on them as teachers.

The instrument used for data collection was a questionnaire designed by the researchers. Some colleagues in the Faculty of Education who were experienced in the construction of research instruments helped to validate the questionnaire. As a result of the input of the experts, some items were added while a few others were restructured. The respondents were required in some cases to indicate the extent to which they agree or disagree with the items, while some other items required a dichotomous response, that is, stating either 'yes' or 'no'. The reliability of the questionnaire was established using test-retest procedure with a three-week interval. A coefficient of 0.65 was obtained using Pearson product moment formula to analyse the responses obtained. Data collected were analysed using simple percentage, mean score and chi-square statistics.

RESULTS

The analysis in Table 1 above indicates that 40 or 17 per cent of the respondents stated that the programs are highly relevant to the training needs of their states, while 200 or 83 per cent of the respondents agreed that the programs were relevant to the training needs of their states. This shows that the training programs offered by the Institute are considered relevant to the needs of the area under study.

Table 1. Data on the Relevance of the NTI Programs

Options	Frequency	Percentage
Highly relevant	40	16.67
Relevant	200	83.33
Not Relevant	0	0
Total	240	100

The analysis presented in Table 2 above reveals that all the variables analysed except one met the mean score standard of 2.50. They were therefore considered as major constraints to the Institute's training programs. The ranking of the responses shows that inadequate finance is considered a crucial constraint as it is ranked first. This is closely followed by Unconducive learning environment, which ranked second. Next is lack of library facilities, which ranked third. This is followed by inadequate teaching and learning materials (ranking fourth), lack of laboratory equipment (ranking fifth), and the problem of accommodation, which is ranked sixth. Only the

issue relating to the problem of accommodation was not considered a problem of the Institute's training program.

**Table 2. Mean score Distribution on the constraints of the programs
(Criterion mean score 2.50, N = 240)**

	Variables	Mean Score	Rank	Remark
1	Inadequate finance	3.85	1 st	Accepted
2	Problem of Accommodation	2.00	6 th	Not accepted
3	Inadequate teaching/learning materials	3.50	4 th	Accepted
4	Lack of laboratory equipment	3.05	5 th	Accepted
5	Lack of library facilities	3.60	3 rd	Accepted
6	Unconducive learning environment	3.80	2 nd	Accepted

The results in Table 3 show that 20 of the respondents representing 8 per cent of the respondents indicated that the programs are highly effective. Thirty or 13 per cent of the respondents are of the view that the programs are moderately effective. One hundred and fifty or 63 per cent of the respondents were of the opinion that the programs are fairly effective. Only 40 or 17 per cent of the respondents agreed that the programs are not effective. It is obvious that the programs are considered fairly effective in meeting its mandate to the people within the area under focus.

Table 3. Data on the level of Effectiveness of the Programs

Options	Frequency	Percentage
Highly effective	20	8.33
Moderately effective	30	12.50
Fairly effective	150	62.50
Not effective	40	16.67
Total	240	100

From Table 4 it can be seen that the computed chi-square value of 52.5 is greater than the tabled value of 5.99 at 0.05 alpha level with 2 degrees of freedom. This implies that there is relationship between the training provided and the level of performance of the beneficiaries. In other words, those sampled from the various programs agreed that the program has impacted on their level of performances as teachers.

Table 4. Chi-square Distribution of the relationship between Training and Teacher Performance

Options	TC.II	N.C.E	PTTP	Total	X ²	Crit.X ²
Yes	40(53.33)	70(53.33)	50(53.33)	160		
No	40(26.70)	10(26.67)	30(26.67)	80	52.2	5.99
Total	80	80	80	240		

Significant at P<0.05

DISCUSSION OF RESULTS

The analysis of the results obtained show that the training programs provided by the NTI are relevant to needs of the area under investigation. This is not surprising since the training programs are based on the existing curriculum designed for the training of the teaching personnel in mid-western states in particular and the country at large. Besides, the Institute provides a program within the confine of the mandate given to it. However, it was also found that the Institute is faced with a number of constraints, which has limited its operations and made it difficult for it to achieve fully its objectives. Little wonder therefore, that the respondents indicated that it is yet to effectively achieve its goals. The Institute over the years has had to depend entirely on existing secondary school structures and facilities for its various programs. The state of these structures and facilities are better imagined than described. Many are in a state of disrepair. This clearly explains why the people consider the environment quite unconducive for learning. The greatest problem faced by the Institute is inadequate funding or finance coupled with lack of library

facilities and inadequate teaching/learning materials. This probably accounts for the limitations to the effectiveness of the Institute's training program.

The results of the analysis of the responses obtained on the relationship between training programs and the level of performance of the teachers or beneficiaries show that the programs have impacted on the level of performance of the teachers. This probably might be responsible for the high interest of teachers in the programs. The level of participation has continued to increase over the years. Another reason may be based on the fact that the Institute adopts distance-learning approach, which enables the Institute to reach out to very many of the teachers irrespective of where they reside.

CONCLUSION AND RECOMMENDATION

In the light of the above discussion, it is clear that the National Teachers' Institute has done fairly well in pursuing the mandate given to it. The level of performance has undoubtedly been hampered by a number of problems among which are inadequate funding and unconducive learning environment.

On the basis of the findings of the study reported here, it is recommended that the Institute should be adequately funded. In other words, more funds should be made available to the Institute to enable it purchase the needed learning and teaching materials and other facilities that would make for effective teaching and learning.

Efforts should be made to consolidate the success achieved so far. More teachers should be encouraged to enlist in the program as a means of raising the revenue base of the Institute for its programs.

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Oral Tradition and Civic Education in Africa

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The purpose of this paper is to demonstrate that oral literature, which is an aspect of the oral tradition, has functioned historically as a vital medium of moral and civic education in non-literate societies the world over. Through the ages, oral literature has performed this function by presenting its various genres as forms of entertainment that are designed to inculcate in listeners the social mores and world view of their communities. It follows, therefore, that modern African nations can adapt their oral traditions to current realities and utilise them as effective instruments of civic education, especially these days when the entire world has been transformed into a global village.

Oral tradition, civic education, Africa, literature

I teach kings the history of the ancestors
so that the lives of the ancients might
serve them as an example, for the
world is old, but the future springs
from the past.

SUNDIATA

The primary goal of civic education in any country is the acculturation of the citizens into the world view of that nation. Generally, the mission of such education is to endow the citizens with the information and skills to recognise and do what is right in any given situation. At the present time, one of the most pressing issues that confront many African states is the problem of national integration; many of these recently independent countries have difficulty in welding into one state their numerous ethnic nationalities. Fortunately, this handicap can be surmounted through effective civic educational programs.

The purpose of this paper is to demonstrate that oral literature, which is an aspect of the oral tradition, has functioned historically as a vital medium of moral and civic education in non-literate societies the world over. Through the ages, oral literature has performed this function by presenting its various genres as forms of entertainment that are designed to inculcate in listeners the social mores and world view of their communities. It follows, therefore, that modern African nations can adapt their oral traditions to current realities and utilise them as effective instruments of civic education, especially these days when the entire world has been transformed into a global village.

The term 'oral literature' is used here to mean the verbal art of an essentially non-literate community. It is composed in the presence of a traditional audience for its entertainment and edification. Furthermore, oral poetry—which is a genre of oral literature—will serve as our point of departure in this examination of the role of oral literature as a medium of civic education in traditional societies.

Homer's *Iliad*¹, which is one of the pillars of literature of the Western world, is now generally believed to have been composed by an essentially oral poet. This Homeric epic is based on the popular, traditional lore of the time and it portrays the heroic exploits of valiant men. Admittedly, these men have their foibles and personal failings.

Yet, in the main, they are portrayed in such a way that they are seen as men who embody the highest ideals of the society. In Homer's account of the Trojan War, many of the characters indulge in various aspects of Oral Literature, as is exemplified when even in the heat of battle Glaukos regales Diomedes with the panegyric of his ancestors, as may be seen in Book Six of the epic².

It is my contention that the presence of this panegyric here is not accidental. Rather, it is in keeping with traditional practice. Such is the way that traditional composers hold up for emulation the socially admired qualities of their cultural heroes and role models. More importantly, this method of inculcating desirable behaviour is not limited to European traditions. On the contrary, such practices abound in the African continent. Among the Basotho, for example, as Kunene has amply demonstrated, the men who are held up for societal admiration and emulation are "men who are men," men who would rather lose their lives than lose their honour. On account of the proximity of Sotho life to all kinds of physical danger like the endemic raids that enable one to enlarge one's herd of cattle, the constant threat of annihilation by hostile, neighbouring ethnic groups, and the abundance within that environment of predatory animals like lions and hyenas, the ethos of Sotho society encourages the admiration of men who are not only courageous but are also physically strong. This attitude is epitomised in the following Sotho poem:

The newly initiated on yonder at Mohato's
Is dark-brown-colored and has strong biceps.
His thigh is like an antelope's, he, the Letsitsa warrior,
Brother of Mpinane,
Indeed were it that men were bought,
He should then be surely bought, he, 'Mamononane.'³

The same attitude is also reflected in the following poem:

High-ranking ones are they who sit within the king's court the Dinare Regiment;
Beautiful men whose seed is fit to be planted, Dinare,
Planted within the valleys to sire Diwehla warriors.⁴

Not unexpectedly, these Basotho who admire men of courage are totally contemptuous of cowardly men, since such weaklings are a threat to the corporate survival of their nation:

On that day there was a separation of men,
Yea, the cowards separated themselves, and were seen;
And they clawed the mountain-sides;
They splashed the mountain with their liquid excrement,
The cowards splashed their heels with liquid excrement.⁵

By celebrating in this manner the lives of the men who epitomise the societal ideal, the Basotho people use these heroic portraits to inspire young men to emulate their valiant ancestors. As is clear from many of the poems in Sotho tradition, these ancestors risked their lives sometimes not

¹ Homer. (1975) *The Iliad of Homer*. Trans. Robert Fitzgerald. New York: Anchor Books.

² Homer. Op. cit. (pp.141–158).

³ Kunene, D. (1971) *Heroic Poetry of the Basotho*. Oxford: Oxford University Press. (p.8).

⁴ Kunene. *ibid.*

⁵ Kunene. op. cit. (p.9).

out of necessity but in their quest to bring honour to themselves and their community. Thus, these warriors who are celebrated in these works have demonstrated that there is more to life than mere vegetable existence.

Among the Tswana people, also of Southern Africa, praise-songs are again a medium of inculcating societal ideals because, although such poetry may be composed about all conceivable topics, the principal theme of the praise-poems is valour. In this tradition, one is permitted to sing in praise of one's spectacular achievements. Usually when a man has accomplished spectacular deeds, he composes poems into which he weaves the historical circumstances that surround the events. In this way, the praise-songs also serve as a medium of preserving historical records. Another use of praise-songs in this society is the praise of one's lineage or ancestry. In this situation, the feats performed by one's valiant sires are catalogued and the circumstances of their outstanding deeds are also listed. The goal, of course, is to spur on their descendants to try to achieve similar goals in their own lives. This is particularly true of praise-songs of chiefs and their predecessors. Such poems exhort the chiefs to emulate those qualities of their ancestors—like courage in battle and the chase and their generosity in distributing largesse—which made them truly great and enabled them to bring prosperity to their kingdom. Such poems often remind the chief of the most urgent tasks that demand his immediate attention. In very rare instances, however, there may be implied and indirect criticism of his not-so-pleasant deeds. In such situations of negative praise-singing, the poet takes shelter under the poetic licence that is accessible only to court poets. Generally, however, the praise songs may pertain to the spectacular achievements of the reigning king. By implication, he is being urged to continue along the lines that won him the glory, as is exemplified in the following eulogy of Tshekedi, one of the famous Tswana rulers:

When the tribes were gathered yonder
and all the chiefs went to be shaved,
ours did not have his hair cut,
Tshekedi it is who stays as he was.
A lion that limps is not worthy of a mane,
If it's a coward it's not worthy of a crest,
but an all-powerful one can never be shaved.⁶

The same feeling is illustrated in yet another extract from the same praise-poem:

The lion roared in wonder at Tshekedi,
for it saw the chief challenge it,
MaMphakere's and Bonyerille's brother challenge it.
The wind pierced the man's bones,
it pierced the young man's joints;
those born in Serowe were overcome,
there remained those born in Palapye;
Tshekedi alone did not shiver.⁷

Among the Nyanga people of Central Africa, the *Mwindo Epic* is a sustained panegyric of their cultural hero, Mwindo. This enfant terrible—whose birth was previously proscribed by his own father—is born preternaturally through the medium of his mother. He is born with a Conga sceptre in his right hand and an adze in his left. In addition, he is born carrying a bag of the spirit of Kahombo. Above all, Mwindo talks and walks soon after his birth. His exploits are truly heroic because they take him to the four spheres of the Nyanga universe: earth, underworld, atmosphere,

⁶ Schapera, I, ed. (1965) *Praise Poems of Tswana Chiefs*. Oxford: Oxford University Press. (p.226).

⁷ Schapera, *ibid*.

and sky. In each sphere, he battles with titanic forces, some human, some animal, some divine, some semi-divine, while some are utterly fabulous like Mkiti, the Water Serpent.

The hero's tribulations begin soon after his birth; his father tries unsuccessfully to spear him to death. Thereafter, his father imprisons him in a drum and throws both the drum and its content into a pool. From there, the hero begins his underwater journey that takes him to the domain of Mukiti, the Water Serpent. There, he overcomes all kinds of aquatic enemies. At this time, he has become an adult and now Mwindo, the Little-One-just-born-he-walked, returns home to confront his father. The resulting war in their hometown, Tubondo, totally devastates the place, but Mwindo's father—Shemwindo—escapes to the underground region. This, in turn, necessitates Mwindo's subterranean journey in pursuit of his fugitive father. In this zone, too, he overwhelms all the forces that offer shelter to his father and eventually captures the old man. On his return home, Mwindo rebuilds his destroyed hometown and is installed as its ruler in the wake of his father's abdication. Thereafter, he rules peacefully for several years. However, he commits an act of hubris, which results in his being punished. Paradoxically, it is during this period of chastisement in the aerial zone that Mwindo sheds his youthful exuberance and learns moderation, which is the Nyanga ideal of the good life.

It is indeed after he has purged himself of all forms of excesses like boasting that he begins to rule wisely. Thus, in the end, Mwindo epitomises moderation, courage, humility, wisdom and benevolence, which together constitute the ideal qualities expected of a great Nyanga ruler. By eulogising Mwindo in this manner, the Nyanga society holds him up as a role model that should be emulated by its citizens.

The practice of using praise-poems as a medium for inculcating desirable social behaviour is not limited to Southern and Central Africa. On the contrary, such a system of civic education is practised in West Africa, too, as is exemplified in *Sundiata: An Epic of Old Mali*. This narrative begins with a categorical statement by the *griot* as to the function of oral literature in society as well as the role of the oral performer within that tradition:

I am a griot. It is I, Djeli Mamoudou Kouyate,
son of Bintou Kouyate and Djeli Kedian Kouyate,
master of the art of eloquence. Since time immemorial,
the Kouyates have been in the service of the
Keita princes of Mali; we are vessels of speech,
we are the repositories which harbor secrets
many centuries old. The art of eloquence
has no secrets for us; without us the
names of kings would vanish into oblivion,
we are the memory of mankind; by the
spoken word we bring to life the deeds
of kings for younger generations.

.....

I teach kings the history of their ancestors
so that the lives of the ancients might
serve them as an example, for the
world is old, but the future springs
from the past.⁸

⁸ Niane, D.T. (1970) *Sundiata: An Epic of Old Mali*. Trans. London: Longman. (p.1).

Thereafter, the griot re-enacts for his audience an account of the heroic life of Sundiata, Emperor of the ancient kingdom of Mali, son of Nare Maghan Djata and Sogolon Djata—the human incarnation of the fabled Buffalo of Do. Thus, Sundiata's genealogy shows that he is a fit subject of a heroic narrative even in the classical Western sense of the word; his father is a king, while his mother is partly human and partly animal. Besides, his birth is heralded by portents, much in the same way as the heroes of Western epics. He has retarded and unusual development as a child, but once the lion in him is awakened, he becomes a child endowed with prodigious strength. Since his special talents arouse the jealousy of his father's other wife, Sassouma, his mother takes him with her into exile. It is noteworthy, here, that the exile of an endangered saviour of his people is recurrent in many traditions the world over.

During the seven years of Mwindo's exile, the hero acquires both wisdom and the art of warfare, which stand him in good stead when he returns home to liberate his fatherland from Soumoro Kante, the sorcerer King of Sosso. In the end, Sundiata's battles against Soumaoro turn out to be more of a contest of charms rather than one of physical prowess. Predictably, Sundiata triumphs; as his griot, Balla Fsseke, reminds him:

Your are the son of Nare Maghan, but you
are also the son of your mother Sogolon, the buffalo-
woman, before whom powerless socerers shrank
in fear. You have the strength and majesty of the
lion, you have the might of the buffalo.⁹

Having liberated his homeland, Sundiata extends the war to Soumaoro's home base and sacks Sosso, to the land of the sorcerer king. Thereafter, Sundiata's rule is unchallenged throughout the region. Like all such epic heroes, Sundiata finally begins to give laws and prohibitions that do not merely enable him to rule peacefully but also to establish a reign of peace that lasts long after his death.

It should be noted that the truly remarkable qualities of the Emperor of Mali are his aristocratic birth, his prodigious strength, his indomitable courage, his patriotism, and his love and concern for the welfare of the citizens of Mali. These are the qualities that both the griot and his community at large admire. They, too, are the qualities that the community would like the audience to emulate from this narrative of the life of the heroic king.

It is not only in the *sahel* region of West Africa, however, that the art of using praise-songs as a medium of inculcating admirable social behaviour is practised. *The Ozidi Saga*, which is an Ijo epic has a similar objective. The Ijo people are an ethnic group in Nigeria's Niger Delta region. In this rendering, a group of warrior-lords from Orua, who do not want Temugedege to become their king, assassinate his brother, Ozidi, who is the commanding general of their nation-state. Later, a son is born posthumously to the assassinated warrior. Consequently, even before the boy is born, his grandmother takes Ozidi's mother (Orea) to her own home in Ododama. In the safety of Oreamae's home, the pregnant Orea gives birth to her son, named after the infant's dead father. The upbringing of this child is specially supervised by Oreame. As is common with such epic heroes, Ozidi develops prodigious strength early in life. Later, he returns home to destroy all those who had a hand in the assassination of his father. As is also the case in most traditional societies, such a act of vengeance is what is expected of a dutiful son. Thereafter, Ozidi engages and vanquishes every kind of preternatural force and monster ranging from the Scrotum King to cannibals like Azema and Azemaroti. His final battle is with the Small Pox King. Here, Ozidi is almost vanquished by his assailant, but once Orea treats her son with the antidote for yaws, Ozidi

⁹ Niane, op. cit. (p.63).

overcomes even this near-fatal attack. In the end, Ozidi's authority is unchallengeable and he lays down his sword when there is nobody else to fight:

Hey, Orea, my mother, my mother, my
mother, my mother!
Those who killed my father I have now
taken them all, my mother, mother,
mother, mother!
Oh, Oreame, my mother, my mother, my
Mother!

Oreame, you the woman who knows
everything, take my sword, take my
sword, take my sword, take my sword!¹⁰

Here again, the virtues that are dramatised for emulation are Ozidi's prodigious strength, his ability to manipulate magical powers, his fearlessness, and his execution of his filial duty to his dead father.

What has been demonstrated so far is that traditional societies generally compose legends about spectacular characters who embody the communities' ideals of good behaviour. These are the heroes who are celebrated in the Oral Literature of the various societies that have been surveyed in this investigation. In the narratives under review, the heroes are endowed with numerous admirable qualities and are held up to the people for emulation.

Occasionally, some people in society manifest socially reprehensible behaviour. Naturally, the communities concerned would not like others to emulate these deviants; hence, the societies lampoon these malefactors through satirical songs, as is exemplified in the following extract from the Igbo song, Maritta Ofoka:

If you want some fun jump the fence to Maritta Ofoka,
War!
Sorry, my lady, go find who put you in your state,
War!
My lady, my white sophisticated lady, war!
Go find who put you in your state, war!
You, quick to abort, will a basket of pepper serve your needs?
War!
Sorry, my lady, go find who put you in your state, war!
If you approach Maritta's bed, the stench of Pomades suffocate you.
War!
Sorry, my lady, go find who put you in your state,
War!
If you get to the lady's bed, her body is playing Bongo, war!
Sorry, my lady, go find who put you in your state,
War!
When a young girl marries she says her mates are Left-overs,
Sorry, my lady, go find who put you in your state,
War!¹¹

¹⁰ Clark, J.P. (1977) *The Ozidi Saga*. Ibadan: Ibadan University Press. (p.387).

¹¹ Egudu, R. and Nwoga, D. eds. (1971) *Poetic Heritage*. Enugu: Nwankwo-Ifejeka. (pp.114–119).

From the extract above, one can discern that the song mocks Maritta, the wayward girl, who imagines that she is sophisticated and is, therefore, better than all the other girls around her. The song implies that it is her socially repulsive way of life, which results in her unwanted pregnancy. Her portrait here is deliberately made to be so revolting that nobody would want to be like her.

The exercise above demonstrates that traditional societies, especially traditional African societies, use their Oral Poetry as a medium of teaching their population socially acceptable behaviour. Thus, they utilise their oral traditions as an effective instrument of civic education.

We have established above that the primary function of civic education all over the world is the transformation of the populace into committed and informed citizens. At the present time, most African states confront the issue of national integration. They face the challenge of providing the kind of civic education that will weld together their numerous constituent nationalities into one nation. Consequently, these states need to focus on the issues that bind the people together so they do not dissipate their energy on the concerns that keep them apart.

Regrettably, most African leaders do not seem to realise that their problem of national integration can be solved by resorting to the time-tested strategy that is discernible in their oral traditions. Just as Renaissance Europe rediscovered and reclaimed its past oral tradition, so can modern African states rediscover and popularise the traditional epics and legends of their constituent ethnic nationalities. By blending these narratives and adopting them as their common national heritage, these countries can use the heroes of the oral traditions as veritable icons in their civic educational programs, since the traditional heroes usually embody the highest ideals of their society. Deployed in this manner, these traditional cultural heroes will serve as formidable civic role models for their compatriots to emulate.

The place of the oral tradition in the civic educational program of all African countries, then, is clear: it must be used to nurture a single national consciousness in all the citizens of each country, regardless of their ethnic origins.

The Unbearable Vagueness of Critical Thinking in the Context of the Anglo-Saxonisation of Education

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This paper examines the stereotypical view that Asian students cannot think critically. Although critical thinking is often presented as a generic skill, crucial to success at university, definitions of the concept vary widely. Critical thinking can therefore only be understood by placing it into the context in which it is used. This disadvantages many international students, who often have not acquired the cultural competencies necessary to read in context, and who are unfamiliar with the concept of critical thinking as a learning experience. This paper also advocates more clarity and openness about learning practices, including critical thinking, and recommends more receptiveness towards learning practices adopted in other countries. If Australia wants to continue to attract international students and to be considered as offering a truly international education program, there is a real need for academic staff to develop intercultural competencies.

critical thinking, international students, internationalisation of education,
intercultural competencies, learning practices

INTRODUCTION

Australian universities, largely for economic reasons, are enrolling more and more international students. Adapting to study in Australia is often a big challenge for those students. To adapt to and do well in the Australian education system, international students have to acquire competency not only in the English language, but also in Australian educational practices, which are largely culturally defined. Critical thinking, as one of these practices, lies at the core of university study in Australia.

This paper examines critical thinking as one of the practices embedded in Australian education. It acknowledges that the concept, because of its multiple meanings can only be understood in context. As such, critical thinking only appears to cause problems for international students who are unfamiliar with the concept and unable to recognise it in context. Despite this, critical thinking is presented as a key skill by the Australian education system.

This paper further argues that more openness to critical thinking as a learning practice and a better understanding of learning practices that exist in other countries might be a better solution than the traditional stereotyping of international students as rote learners.

Australian academics appear to demonstrate very little knowledge of education practices in other countries. There seems to be an entrenched belief that Australian practices are somehow better than those existing in other countries. There is also a need for Australian academics to understand and accept that different educational systems have their own conventions. Therefore, it is necessary for academics to consider international students not as students disabled by their lack of familiarity with English and the learning conventions that exist in Australia, but as students who come with different strengths who have a contribution to make.

THE INTERNATIONALISATION OR ANGLO-SAXONISATION OF EDUCATION

International students come to Australia with expectations that come from their past experience and, whether they realise it or not, they must learn to adapt to new circumstances in order to succeed academically. This includes incorporating priorities formulated by the Australian education system and often adapting to new ways of studying and preparing assignments.

Because most Australian academics are so familiar with Australian, or more generally Anglo-Saxon university practices, they present these practices as being natural and often assume that the conventions surrounding these practices are either universally known, or that they should be universally applied. Since Western Anglo-Saxon countries (mainly the United States, the United Kingdom, Canada and Australia) are instrumental in the internationalisation of education, there is a trend towards the universalisation of the education practices of Western Anglo-Saxon countries.

The internationalisation of education has also been called Westernisation of education (Biggs, 1997, p.5). In practice it is much more an Anglo-Saxonisation of education. Many Anglo-Saxon writers, for example, Biggs (1997) and Ryan (2000) focus on the educational differences between Western and non-Western cultures, but appear to disregard the complexity and diversity of Western education practices. The implication that all Western cultures adopt English or American conventions and standards is far from true. Sullivan's (2002) research into cultural and societal differences in assessment across Europe is indicative of the diversity in assessment and teaching styles that exist within Europe itself.

Overall, international students favour English-speaking countries as places to study. There is clearly an increasing worldwide demand for study in English-speaking countries. Educational institutions in those countries offer both a study and also a cultural program in English, which has very much developed as the international language. It is mainly for this reason that students from non-English-speaking countries are prepared to pay a lot of money to study in an English-speaking country. Thereby they hope to acquire internationally recognised linguistic and cultural competencies, which can be very useful in a global context. In many countries, obtaining an English degree is seen as the ideal path to preparing young people as individuals and as citizens to operate in the global village marketplace. Many international students also recognise the importance of a degree from an English-speaking country as a passport for the world.

The Australian education sector has been quick to respond to this demand by offering fee-paying courses to international students, thus attracting large numbers of students, particularly from Asia. The fact that those international students are mainly seen as lucrative business opportunities conflicts with education principles and does not recognise any other potential inputs, such as alternative frameworks for learning theory.

THE NECESSITY TO ADAPT TO DIFFERENT LEARNING PRACTICES

Too often Australian academics portray international students, particularly Asian students, as not being able to reach the high standards existing in Australia. Asian students regularly are the objects of stereotyping, but the extent to which these stereotypes fit reality can and has been debated (Ellwood, 2000). Therefore, in general, international students continue to be widely criticised for their poor English skills, for their inability to think critically, for their propensity to memorise rather than to learn through understanding, and for their extensive practice of plagiarism. Underlining many of these stereotyped ideas is the assumed certainty that the principles of the Australian education system are unquestionably superior, rather than just different, than those existing in Asia. Generally this goes hand in hand with, if not a disregard for, a very superficial understanding of students' previous learning experiences.

International non-English-speaking students who come to Australia are confronted not only with problems of functioning in a different language, but also with the need to adapt to a different educational culture. The importance of academic adjustment goes well beyond language and cultural factors (Ballard and Clanchy, 1991; 1997). Some of those adaptation problems are rooted in past learning experiences. International students bring with them learning experiences that may be very different to what they experience in Australia. What worked back home may no longer be considered valid in Australia. This leaves students with the task of rebuilding a new understanding of what works and what does not. As Sullivan (2002, p.72) indicates, “familiar codes are broken and the attempt to decode the new ones is not a straightforward task”.

Different cultures value different skills and therefore different learning practices. According to Ryan (2000), differences affect modes of participation, teacher-student relationships, learning styles and approaches to learning, attitudes to knowledge and learning. While the Australian education system seems to emphasise personal development, in many countries the acquisition and accumulation of knowledge is given more importance. This can of course, be linked with the emphasis in Western English-speaking countries on the individual rather than on the group. In many Asian countries, the group is more important than the individual.

In many cases, students’ previous learning experiences, which were assets in their own countries suddenly become obstacles and are, in some cases, even defined as inferior practices. It is not the object of this paper to examine and compare the quality of students in Australian universities with those attending universities in other countries. However, there is no convincing evidence that Australian students are of a better calibre because of the learning practices they follow. On the contrary, according to Biggs (1997), students from East Asian educational systems outperform Western students on the same academic achievement tests.

DEFINING CRITICAL THINKING

Although critical thinking lies at the core of university education in Australia, its meaning is not always clear and an awareness of context, which may elude international students, is necessary to identify properly the possible meanings of the concept. The idea that the ability to think critically is required to do well at university is widespread, but the concept is vague and does not seem to have the same meaning for everybody, in every circumstance (Atkinson, 1997; Ennis, 1992). Because of its vagueness, the context in which the concept of critical thinking is used plays a key role in defining it. Unfortunately, contextual knowledge is precisely what many international students appear to lack, since it is something that normally develops over many years through immersion.

Existing definitions of critical thinking can broadly be divided into two categories.

- 1) **The ability to develop a capacity to reason logically and cohesively.** As such, this refers to the capacity to carry out a set of logical operations, to evaluate categories and forms of knowledge in order to determine their validity. Critical thinking is, in this case, also about the capacity to apply theory to practice.
- 2) **The ability to question and challenge existing knowledge and the social order.** This definition of critical thinking is inspired by Marxist tradition and based on the use of reason to examine historical and social realities to uncover hidden forms of domination and exploitation. Thus, for Brookfield (1987, p.15) critical thinking is about taking democracy seriously; it is about “identifying and challenging assumptions and exploring and imagining alternatives”. Benesh (1993) argues that critical thinking is a search for the social, historical, and political roots of conventional knowledge and an orientation to transform learning and society.

According to Wacquant (2001), it is necessary to bring these two categories of definitions together, so that the capacity to reason logically can be used to broaden critical thinking and allow for the freedom to think about the world beyond the restrictions imposed by dominant interpretations of the world.

It is this multiplicity of definitions of critical thinking that has led Atkinson (1997) to look at critical thinking as a socially constructed concept, a non-overt social practice rather than a well-defined and teachable set of pedagogical behaviours. For Atkinson (1997) critical thinking is essentially embedded in Western culture, since it can only be valued by cultures that see individuals as primary units, and who favour the idea of individual conflict and dissension rather than consensus and individual thought.

CRITICAL THINKING AS A LEARNING PRACTICE

Critical thinking has become a practice developed and promoted by Western English-speaking countries, particularly from the 1970s onwards. At the same time, courses providing the knowledge most valuable to practise critical thinking have been taken out of schools' and most universities' curricula. This is particularly true in courses such as history, philosophy, and logic that have been replaced by more practical courses.

By doing so, educational institutions have adopted learning curricula in line with the priorities of a system demanding practical education, producing students who do not need much further on the job education. This is in line with demands made by workplaces that nowadays seem to prefer young graduates who can do the job, to young graduates who can think critically. University courses such as classical languages, history, and grammar have often been replaced by more practical courses such as marketing, public relations, and tourism for example. It can easily be argued that by concentrating on the understanding of those immediately useful skills, which have a direct business application, the possibility for students genuinely to think critically, is greatly reduced, since no strong background is provided for them to do so.

Critical thinking is in most workplaces largely defined as the ability to carry out a set of logical operations. In many areas of professional life, critical thinking as questioning the *status quo* might then be seen as an obstacle. The sort of critical thinking that is valued consists of applying theory to practice, but certainly not critical thinking that might question dominant interpretations of the world. On the contrary, questioning dominant rules in Western society is not required to be successful professionally.

MEMORISATION VERSUS UNDERSTANDING

Educational institutions, particularly in countries like the United States and Australia, have often abandoned other background course material, which requires memorisation. This is the case for instance, in courses teaching classical languages such as Greek and Latin, history, poetry, and grammar. This can be attributed to a negative attitude towards memorisation, which is seen as opposed to understanding.

Memorisation was for a long time recognised as a valid learning practice in English-speaking countries and still is in many Western countries as well as in most Asian countries. Today it is often denigrated as an inferior learning practice. Memorisation as a learning practice puts the accent on the accumulation of knowledge, rather than on the capacity to criticise knowledge. According to Ballard (1987, p.114), memorisation is popular in Asian countries because traditional knowledge is highly respected in those countries; while questioning and criticism is not part of the learning process. This has led to the stereotype that portrays Asian students as surface learners, who memorise, and have no deep approach to learning.

Perhaps memorisation and understanding should not be separated. Many European educational institutions that still teach traditional subjects have a place for memorisation as a learning practice. It is therefore not surprising that Marton, Dall'Alba and Kun (1996) found that memorisation and understanding were not necessarily separated and that memorisation is used by Asian students to develop understanding. Li and Chang (2001) also found that rote learning was used both to facilitate vocabulary acquisition and consolidate knowledge. According to Biggs (1996, p.63), the idea that Chinese students are rote learners is "a Western misperception arising [from] a mistaken interpretation of repetitive effort. Chinese students may be repetitive, but there is no evidence that they rote learn any more than their Western counterparts".

AUSTRALIAN ACADEMICS NEED TO BECOME MORE INTERCULTURALLY COMPETENT

Organising learning practices hierarchically, in terms of their value to learning is clearly a culturally determined process. Maybe it is time for Australian educators to consider how they could benefit from being exposed to other countries' experiences. This would allow educators to evaluate their teaching practices from a different angle, while also gaining a better insight into what it means to be an international student in Australia.

In the face of the difficulties surrounding critical thinking as a concept, criticising international students for not intuitively being capable of thinking critically is not acceptable. Critical thinking is often problematic for national students, who have the advantage of understanding language and context better. Whatever the type or level of critical thinking demanded, extensive background knowledge is required to access a common sense understanding of the practice of critical thinking. International students often do not possess this background. The problem this creates is compounded by the complexity of English argumentation skills. A good understanding of English is a prerequisite both to access background knowledge and to express argumentation itself. As Davies (2000) argues, for many students coming from a non-English-speaking background understanding, constructing and criticising arguments represents a serious problem.

CONCLUSION

Demanding critical thinking of international students might therefore involve a more pragmatic approach. This would consist first of examining learning practices, including critical thinking, for what they are: socially constructed practices and not superior practices or a superior form of thinking that is only accessible to the best. Then there might also be a need to examine how learning concepts, such as critical thinking, apply to different disciplines or courses. Finally, students should be made aware of what is expected from them and how they can practically fulfil these expectations. This is not merely assuming that they will understand and eventually adapt. Often students do adapt to learning requirements, often almost intuitively, but for many international students adapting intuitively presents too many hurdles. Therefore, there is a need to explain learning practices. What does critical thinking mean in the context of this unit? How does it differ? How is it done in essays and tutorials? Why do Australians value critical thinking so much? Burwood (1999) calls this, teaching explicitly. For him this is about "educators revealing their hand and making explicit to students the ground rules of disciplinary genres".

Explicitness might also involve the need for Australian academics to develop a better understanding of international students as learners. Since explicitness about learning practice involves discussing learning practices, it may also lead educators to examine, compare and hopefully conciliate different teaching and learning practices.

International students are too often considered for their economic value, while the benefits of the different cultural competencies they can bring to a university are often ignored. Few have

questioned what international students bring in terms of experience and knowledge and a lot of adjustment has been asked from international students. Little adjustment appears to have been done by teaching academics who seem to expect students to adapt. If universities are going to continue attracting international students and want to be successful at integrating and educating these students, they must also develop their programs by becoming internationally and culturally competent institutions. This cannot be done without the participation of academics themselves, who need to develop intercultural competencies.

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Faculty Attitudes Regarding Student's Preparedness for Culturally Sensitive Social Work Practice in the United States

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In the United States, social work education has a mandate to train students for culturally sensitive social work practice. This mandate is becoming increasingly important as the United States becomes increasingly multicultural. This study presents data that assesses the degree to which social work education is fulfilling this mandate by exploring faculty perceptions regarding the preparedness of Master of Social Work students for culturally sensitive social work. In addition to the presentation of data, a literature review explores the history and role of culturally sensitive social work education in the United States.

Attitudes, cultural sensitivity, social work practice, United States of America

INTRODUCTION

As North American society becomes increasingly diverse, it is essential that social workers develop increased competence in working with diverse populations. While training students to work with diverse populations is a key value in social work education in the United States and a curricular mandate of regulating bodies (CSWE, 1998b; NASW, 1996), little is known about the degree to which students are prepared for culturally sensitive social work education. This study seeks to provide data to help answer this question by exploring faculty perceptions regarding the preparedness of Master of Social Work (MSW) students for culturally sensitive social work. First, a literature review explores the role of culturally sensitive social work education to provide both a context and rationale for the study. Second, the paper presents data concerning faculty perceptions regarding student preparedness for culturally sensitive social work.

LITERATURE REVIEW

The push to make social work services sensitive to those from various ethnic and cultural groups dates back nearly a century. In 1909, Tucker was one of the first social work educators in the United States to suggest that social work education include information about the experiences of Black clients. The author suggested that social work students learnt about racism in order to help Blacks deal with its effects. It was indicative of the times that the emphasis was not on the amelioration of racism or the provision of culturally sensitive practice, but on helping Blacks to adapt and cope with social ills.

In the 1960s the Council on Social Work Education (CSWE) began to encourage the inclusion of minority content into the social work curriculum. Early efforts focused on the infusion of

culturally relevant material into specific courses such as Human Behaviour in the Social Environment or Racism. Lee and Greene (1999) refer to this model as the cultural competence approach. Early integration of minority content focused on cultural differences and helping social work students understand how these differences impacted on the lives of their clients. Later developments in cultural competence focused on developing specific interventions designed for specific groups. Nwachuku and Ivey (1991) discussed this approach as it applied to the field of counselling:

Culture-specific counseling asks such questions as "How does a particular culture view the helping relationships?" "How do they solve problems traditionally?" "Are there new specific counseling skills and ways of thinking that make better sense in the frame of reference of the culture than typical Euro-north American systems?" The goal is to decrease negative stereotyping and generate a more complex understanding rather than oversimplify cultures. Culture-specific counseling begins with an understanding of the culture and then moves to the definition of concrete skills and techniques for implementing the theory. (Nwachuku and Ivey, 1991, p.107)

The strength of this approach lies in its specificity and its responsiveness to specific problem contexts. Its specificity and focus on skills have been marked improvements over models that focused on knowledge pertaining only to cultural differences. The problem is that in an increasingly complex and multicultural society, it is not possible for social workers to learn culturally competent means of helping all client populations. Ifill (1989) suggests that minority educators realised the importance of infusing minority content into the Human Behaviour in the Social Environment sequence, which had the unforeseen consequence of an over-reliance on intellectually-based learning about minority experiences. Traditional courses dealing with racism and minority content were essentially intellectual or cognitive in nature, to the exclusion of learning that included affective (Fox, 1983) or skill-based (Proctor and Davis, 1983) components. This over-reliance on cognitive learning did not allow for social workers to develop their professional use of self in regard to culturally sensitive practice. The necessity of understanding the discrepancies between one's own values and those of a client from another culture demanded an exploration that was less cognitive and more affective.

To this end, Granger and Portner (1985) developed a framework for the infusion of ethnic and gender sensitive material into social work curriculum that was composed of two major elements: mental and emotional interactions (intra-psychic variables) and societal interactions (macro variables). Both elements were aimed at correcting students' misconceptions (perceptual or cognitive distortions) about women and ethnic minorities. These authors made a valuable contribution to the understanding of culturally sensitive social work and directly informed the development of the questionnaire for this study by stressing the need for students to learn both micro and macro variables that affected culturally sensitive practice.

Gutierrez, Yeakley and Ortega (2000) suggested infusing material on Latino issues throughout the social work curriculum. In their literature review, which encompassed 25 years, the authors identified 273 articles that focused on Latinos. They argued that these articles should be infused throughout different sequences in Bachelor of Social Work (BSW) and Master of Social Work (MSW) programs. These authors stressed the importance of students acquiring knowledge about the values and cultural patterns of Latinos, as well as relevant skills to work with this population:

We must increase our cultural competence by recognising gaps in knowledge and making efforts to address them. In developing our knowledge and skills, we must always consider how well students are incorporating knowledge and understanding of both the distinctive cultural patterns and disadvantaged status of Latinos into their work. (Gutierrez, Yeakley and Ortega, 2000, p.555)

Ifill (1989) stressed the importance of integrating both the affective and skill-based approaches. The author suggested using structured learning experiences within the students' field placements to help them learn to examine their feelings about working with people from different cultures. The processing of affect in the context of the practice class helped students learn about their own biases and prejudices in a less threatening setting. This experiential approach to teaching culturally sensitive social work was another factor that is explored in the questionnaire developed for this study, as it represents one of the vehicles utilised to teach this material.

In order to develop further students' professional use of self, Fox (1983) suggested that students should be introduced to working with clients from other cultures in a pre-field placement practicum, so they might develop a level of emotional insight before their placements in order to begin to become effective helpers. He stressed that in culturally sensitive practice it was essential to learn how to feel with clients, not just **know** about feelings, further stressing the importance of affective learning. The utilisation of experiential approaches to teaching culturally sensitive social work proposed by Fox (1983) and Ifill (1989) is explored in the questionnaire developed for this study, as they represent important vehicles that may be used in teaching this material.

Garcia and Van Soest (1997) conducted the most recent empirical investigation related to culturally sensitive social work education. The authors gathered data from tape-recorded interviews with 43 MSW students enrolled in a course on diversity and oppression. This exploratory study sought to answer several questions. First, what was the effect of this course on students' understanding of their own social identity? Second, what cognitive and affective changes related to the subject matter resulted from their participation in this course? Third, what barriers to and resources for confronting oppression did they learn in the process? The study was exploratory and used a non-probability convenience sample. One of the key limitations of this study was its sample. Results of research using a non-probability sample of social work students from one social work program might not be generalisable to other social work students at other schools. Also, the very fact that the students were studied in the context of their diversity course might have led to biased results, as students might have been self conscious of their responses.

Data were gathered prior to students taking the class in three areas: social identity and prejudice; institutional factors of oppression; and structural causes and consequences of oppression. The authors noted several important findings based on their qualitative analysis of tape-recorded interviews with students conducted both before and after the course. First, students' most important learning related to their own affect. That is, the emotional experience of their coming to grips with their own identity was at least as important as the cognitive content about ethnic and cultural differences. All 23 white, non-Jewish students reported that their ethnic identities had changed over the course of the semester. At least one student remarked that this reformulation of identity led to her perceiving herself as more likely to effect real client change. Many students postulated that their own internalised fears and prejudices would have posed significant barriers in working with oppressed client groups had they not been challenged in the process of the course. In spite of the limitations of this study in regard to generalisability, this study is important as it supports the need for culturally sensitive social work education that does not rely solely on the teaching of cognitive knowledge concerning cultural differences and the minority experience. Social work educators must understand the nature of how ethnic identity and racial prejudices are constructed and maintained within each student. This contention is supported by Pinderhughes (1988) who posits that social workers with positive ethnic identities of their own are most adequately prepared for culturally sensitive practice.

An extensive literature review found only one study that directly attempted to assess the attitudes of social work students and faculty concerning culturally sensitive social work practice. In 1969, a committee was appointed by the Center for the Study of Social Work Practice of the University of

Pennsylvania School of Social Work to assess how the new doctoral program (DSW) dealt with the teaching of content related to the minority experience. The study represents a self-assessment of the school's newly formed DSW program (Beidler and Chalmers, 1978). The researchers sought to study faculty and students' understanding of the meaning of the 'Minority thrust mission' of the School, its particular implementation within courses, and their individual satisfaction with its implementation. Questionnaires were constructed to ascertain faculty perception of how the 'Minority thrust mission' should or should not be implemented in the program. The concept of minority thrust is similar to the construct of culturally sensitive social work. 'Minority thrust mission' is defined as the school's commitment to social change: the eradication of racism, the recruitment of minority faculty, recruitment and financial support of minority students, and the infusion of minority experiences into the course content.

The authors found that there was congruence between the responses of students and faculty regarding both the importance and understanding of 'minority thrust'. The study found that many of the mechanisms for meeting the mission of the program were not structured or formalised. It was seen as the responsibility of each faculty member to infuse content on minority issues and racism into the curriculum. Overall, faculty were found to prefer this infusion method to the option of a specific course on racism. Faculty in this study also rejected the notion of having a course specifically designed to teach culturally competent principles, which represents another model of teaching this material. However, the sample size of the study represents a profound limitation in our ability to generalise from these data. Even had the study been of a representative sample of social work programs or faculty, more than 20 years have passed since the study was conducted, and many socio/cultural factors, and changes within social work education itself, may have altered faculty attitudes concerning culturally sensitive practice.

This study informs the development of one of the hypotheses in this study, as it shows a preference by faculty for the infusion model of teaching culturally sensitive social work practice. It follows that if the structure of the program concerning culturally sensitive social work education is more congruent with faculty preferences, faculty are more likely to utilise culturally sensitive teaching materials.

In a related study, Schwartz, Fluckiger and Weisman (1977) conducted a pilot project to help infuse culturally competent educational principles into social work training. This project was undertaken to help MSW students develop culturally competent and effective skills for working with Puerto Ricans in New York. Their analysis consisted of qualitative methods that were predominately unstructured in nature. They did not utilise systematic research methodology. Therefore, their work could be considered to be more a program evaluation rather than empirical. Most of the data presented was narrative. The authors suggested that the problem with cross-cultural education was not the lack of information about other cultural groups, but the lack of a good framework to integrate such material. The authors presented a model where the role of the educator was that of a facilitator of educational experiences designed to effect two domains of learning, cognitive and affective.

The authors' findings indicated that social work students' attitudes toward Puerto Rican culture and lifestyle prior to the program were largely negative and that they demonstrated a lack of understanding of Puerto Rican values, norms, and behaviour. The researchers concluded that the combined didactic training in affective and cognitive domains, along with the experience of living with a family, led to an increase in empathy toward Puerto Ricans. They concluded that students who participated in this type of training were more likely to be more sensitive and effective practitioners.

The authors made recommendations for providing cross-cultural experiences, including summer programs for a semester in Puerto Rico, or living with a Puerto Rican family. Also, they

recommend knowledge and skill building to including instruction on language, history, culture, socio-economic status, migration history, homeland geography, group customs, tradition, and behavioural norms. On the affective level, they recommend the teaching of and acceptance of other social systems and beliefs, and of the legitimacy of cultural norms that differed from that of the students.

Any discussion of attitudes would be remiss without the inclusion of the important work of Bandura (1977), who theorised that one of the elements to successful behavioural responses was the sense of self-efficacy, the perception that people could, by their own personal efforts, bring about a desired outcome. In a study of adult phobics, Bandura, Adams and Beyer (1977) demonstrated that a person's belief or perception of success in achieving behavioural aims was the most significant factor in clinical success. Many empirical studies supported the contention that the perceptions and attitudes pertaining to the efficacy of a helper or teacher were highly correlated with the success or failure of their clients or students (Austin and Walster, 1974; Bandura, Jeffery and Gajdos, 1975; Lick and Bootzin, 1975).

The empirical studies that have been conducted are dated and do not explore the current realities in preparing students for culturally sensitive social work practice. This study seeks to fill this large gap in the knowledge by exploring faculty attitudes about culturally sensitive social work education.

METHODOLOGY

Design

For the current study, the investigator constructed a questionnaire that operationalised concepts regarding faculty perceptions of student preparedness for culturally sensitive practice in several domains. This design was chosen because exploratory quantitative methods, such as surveys, have advantages over qualitative methods in that they represent an economy of design, a rapid turn-around in data collection, and the ability to utilise quantitative methods of analysis (Creswell, 1994). The main research question that this paper addresses is: What are the attitudes of social work faculty regarding the curriculum in preparing students for culturally sensitive practice?

Sample

The study population consisted of full-time faculty in graduate schools of social work in the United States. The sampling method used was a probability sample of all full-time faculty in Council of Social Work Education accredited Master of Social Work (MSW) programs. Currently, there are nearly 2000 full-time faculty in accredited MSW programs. Statistical analysis indicated that a suitable sample of this population would be 325 participants. To account for typically low response rates of mailed surveys, 1050 faculty were sent questionnaires. As a result, 314 faculty responded to the survey and this response rate was considered adequate on size but possibly contained the unavoidable risk of bias.

All faculty within schools of social work were randomly selected and were asked to participate in the study, namely, half of all MSW programs were selected randomly, and all faculty from each of these schools were surveyed. Lists of faculty who taught full-time in the selected schools were available through the World Wide Web pages of the Schools of Social Work.

CSWE demographic statistics revealed a similar pattern to the demographics of the overall sample, and 70 per cent of respondents in the survey identified themselves as white. This compares to 77 per cent of social work faculty as cited by CSWE. African Americans comprised 12 per cent of the sample, and 14 per cent in CSWE demographics. Of the sample received, 7.4 per cent identified themselves as Latino, compared with only 4 per cent of social work faculty

nation-wide identified as Latino. Since the study was concerned with Latino issues, it was predicted that they would be slightly over-represented in the sample. Asian Americans comprised the next largest group in the sample at 5.2 per cent, compared to 2.7 per cent in the CSWE sample. Moreover, 1.7 per cent of the respondents in this study identified themselves as Native American, while only one per cent was identified in the CSWE statistics.

Gender varied slightly more than race between the sample and CSWE statistics. In this study, 55 per cent respondents in the study were women, compared to 62 per cent in CSWE statistics. Therefore, 44 per cent of the sample were men, while 38 per cent of social work faculty that teach in masters programs are men.

Faculty rank also varied between the sample and CSWE statistics. However, since faculty rank was not shown to be a significant predictor of faculty perceptions with respect to the questions in this study, this is not seen as a major limitation on the study. Since non-tenure track faculty are often not listed on the web sites of schools of social work, and when identified as non-tenure track faculty on such web sites were not sent surveys, instructors are greatly underrepresented in the sample, but make up a substantial percentage of the overall population of social work faculty. CSWE statistics are calculated to exclude instructors or lecturers for the sake of comparison.

Associate professors were the largest group of respondents in the study, at 37 per cent of total respondents. Associate professors are the second largest group of social work faculty overall at 33 per cent, according to CSWE data. Full professors are the next largest group in the sample, consisting of 37 per cent of all the respondents, and 30 per cent of the recalculated CSWE demographics. Assistant professors were the smallest population in the sample at 27 per cent, but consisted of 37 per cent of the social work faculty overall, the largest of the CSWE ranking groups.

Overall, while there are differences between the sample and the general population of social work faculty, there seems to be enough congruence in key, significant areas to make some generalisation feasible.

Instrumentation

A questionnaire was developed specifically for this study. Questions were related to demographic variables of the respondents as well as their attitudes concerning the curriculum of their respective schools of social work. The questionnaire constructed for this study utilised an ordinal scale of measurement. In addition to utilising a Likert scale, several open-ended questions were included to solicit opinions that would not have been anticipated during the data collection process. A pre-test was conducted with faculty from one school of social work not selected for the final sample, in order to help improve the clarity and validity of the study. Two questions were altered in response to feedback from these pre-study participants. Overall, the survey was found to have good face validity.

Data Collection

Surveys were mailed out in hand-addressed envelopes. The envelopes bore the name of the university and school with which the first author was affiliated at the time of the study. It was hoped that this approach would lead to a presentation that was personal, yet official. Also enclosed, attached to the questionnaire, was a printed return envelope.

Two weeks after the initial mailing, a follow-up packet was sent that included a cover letter, an additional informed consent letter, an additional survey, as well as an additional return envelope. The follow up cover letter was seen as crucial to increasing the response rate. It began:

If you have already sent in your questionnaire, thank you so much for participating in my study: *Culturally sensitive social work education for practice with Latinos*. If not, would you please read the letter on the following page, and consider participating in this study with important implications for social work education?

It was anticipated that by starting off with a statement of thanks, faculty who had not participated would be more positively inclined toward the research.

Two weeks after the second mailing, a final e-mail reminder was sent to 90 per cent of the sample. Approximately 10 per cent of the sample did not have e-mail addresses or an e-mail address that was not listed on their department's web site. Since this e-mail was a second reminder, and given the small percentage of potential respondents who did not receive e-mail reminders, this was not seen as a major methodological limitation to this study. The e-mail reminder was a simple letter that both thanked past participants as well as asked those who wanted to participate, but who had not yet done so, to send in their survey. An additional copy of the questionnaire was not included. However, recipients of the e-mail were informed that they could request an electronic copy if they so desired.

DATA ANALYSIS

Data were analysed through the use of SPSS, with both descriptive and inferential statistics utilised in the analysis.

Since a random and representative sample was procured, both parametric and nonparametric statistical procedures were appropriate for data analysis. The use of a randomly selected and sufficiently representative sample was specifically chosen as it allowed for great flexibility in choosing statistical procedures of data analysis (Weinbach and Grinnell, 1995).

FINDINGS

In this section, key findings are presented as they pertain to faculty perceptions of student preparedness. Charts are included of findings from the most central questions. Data in written form are presented on other data. Percentages recorded, as summarised in Table 1, are based on the total number of respondents, and therefore percentages do not add up to 100 per cent. The key question that is discussed in this report is the one that relates most directly to faculty perceptions of students' preparedness for culturally sensitive social work. The question states: "I believe that the MSW program is adequately preparing students for culturally sensitive practice". One hundred and forty-eight (47%) social work faculty agree that students graduating from their MSW program are prepared for culturally sensitive social work. Seventy-five respondents (24%) strongly agree with the statement. Fifty-five (18%) selected neutral as the most appropriate response. Twenty-three faculty (7%) disagreed with the statement. Only five (1.6%) strongly disagreed. The mean score is 2.13. The standard deviation is 0.93. Collapsing the data to provide further insight, nearly 70 per cent of social work faculty agreed that students graduating from their programs are prepared for culturally sensitive practice. Just fewer than 9 per cent disagreed or strongly disagreed. These results are presented in Table 1.

Table 1. Students are prepared

	N	Per cent
Strongly agree	75	23.9
Agree	148	47.1
Neutral	55	17.5
Disagree	23	7.3
Strongly disagree	5	1.6

Another question asked if student were taught a framework for integrating culturally sensitive material. Over 70 per cent of social work faculty either agreed or strongly agreed with this statement. 'Agree' continued to be the most frequently selected response, with 136 (43%) faculty making this selection. 'Strongly agree' followed, the choice of 91 (29%) faculty. More faculty selected 'neutral' (60 respondents or 19%) than in response to the previous two statements discussed. A small number of faculty either disagreed or strongly disagreed, with 16 (1.3%) and 4 (1.3%) respondents respectively. The response frequencies are summarised in Table 2. The mean score is 2.02, and the standard deviation is 0.90.

Table 2. Students are taught framework

	N	Per cent
Strongly agree	91	29.0
Agree	136	43.3
Neutral	60	19.5
Disagree	16	5.2
Strongly disagree	4	1.3

The next statement pertains to skills: "Students are taught skills of culturally sensitive social work practice". The same number and percentage of respondents chose to answer this question as the previous question. Similarly, 148 (47%) respondents agreed with the statement. 'Strongly agree' was the choice of 108 (34%) respondents. Again, over 80 per cent of respondents either agreed or strongly agreed with this statement. Thirty-four (11%) respondents selected 'Neutral' for their response. Only 13 (4.1%) respondents disagreed, and 2 (0.6%) strongly disagreed. The mean score is 1.86. The standard deviation is 0.82 and the results are summarised in Table 3.

Table 3. Skills of culturally sensitive practice

	N	Per cent
Strongly agree	108	34.4
Agree	148	47.1
Neutral	34	10.8
Disagree	13	4.1
Strongly disagree	2	0.6

Another statement sought to measure the degree to which social work faculty believed that social work students are taught theories of culturally sensitive practice. The statement reads: "Students are taught theories of culturally sensitive practice". Nearly half the respondents recorded 'Agree' with this statement, with 154 (49%) electing this answer. 'Strongly agree' was the second most frequent response, being selected by 107 (34%) respondents. Taken together, over 80 per cent of respondents either agreed or strongly agreed that their MSW programs taught theories of culturally sensitive practice. Sixteen (5.1%) respondents disagreed, and six (1.9%) strongly disagreed. Twenty-four (7.6 per cent) respondents selected 'Neutral' for their answer. The results are presented in Table 4 and derive a mean score for this questions of 1.89 and a standard deviation of 0.90.

Table 4. Theories of culturally sensitive practice

	N	Per cent
Strongly agree	107	34.1
Agree	154	49.0
Neutral	24	7.6
Disagree	16	5.1
Strongly disagree	6	1.9

DISCUSSION

These various indicators tested the degree to which faculty believe their curricula are preparing students for culturally sensitive social work practice. The various indicators suggest that the majority of social work faculty teaching in MSW programs do believe that their programs are

preparing students for culturally sensitive social work practice in general. For each statement, over 70 per cent of faculty either agreed or strongly agreed.

It is interesting to note that faculty perceptions regarding what students are taught in the curriculum are stronger than faculty perceptions about students' actual preparedness. Nearly 10 per cent more faculty agreed or strongly agreed with questions regarding what is taught in regard to culturally sensitive practice compared to those who agreed or strongly agreed with students' actual preparedness. In other words, faculty perceived a discrepancy between what is taught and what students actually can do.

There are several possible reasons for this difference. First, in spite of faculty efforts, social work students, like most members of society, have preconceived ideas about ethnic minorities that are deeply entrenched. In spite of this material being covered in the curriculum, it is likely that some students would be resistant to some of this information. Such students may stand out, leaving lasting impressions in faculty members' minds regarding student preparedness. This may be particularly true in courses that focus on American racism, which challenge students on their internalised prejudiced beliefs. Second, while students might be receiving this information in class, this study did not assess the degree to which this information was reinforced in field practicum.

It also should be noted that such results are not uncommon with questionnaires that measure perceptions regarding a phenomena. A key limitation of this study is that it does not measure student preparedness directly. Subsequent studies that measure the relationship between key pedagogical variables and actual student practice behaviour would be extremely valuable.

CONCLUSION

This study presents data pertaining to faculty perceptions regarding student preparedness for culturally sensitive social work practice in the United States. As culturally sensitive practice becomes increasingly important to international higher education, studies that explore student preparedness will be in greater demand. Research in this area is particularly important, as institutions of higher education often invest considerable resources in promoting cultural sensitivity and diversity, yet few have outcome indicators related to their efforts. In times of increasingly tight budgets in higher education, it is essential that universities investigate the impact of their resource allocations.

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Teachers and Teacher World-views

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This paper discusses the increasing imperative for teachers who work in cultural settings other than their own to develop an understanding of their own world-view and the impact their assumptions about teachers, school, students, family and so on have on their teaching practice. The brief narrative of one cultural world-view provides an example of the areas where tensions may arise for teaching practice for the unprepared teacher working in a setting outside their own cultural experience.

world-view, teachers, international, students, reflective practioners

INTRODUCTION

Educators working in the new century of globalisation are finding an increasing imperative for cultural sensitivity and understanding. Boundaries between countries have become increasingly fluid and as Tier says, "The world is ... more interconnected than ever before" (2003, p.77). Students move between countries for their formal education in primary as well as secondary and tertiary spheres. Within the Australian education sectors attracting students from overseas has been recognised as a legitimate activity for schools, colleges, training institutions and universities.

Another feature within the Australian education sector that has been developing over recent years has been the active recruitment of teachers to work overseas in a range of different educational settings. Global competition for teachers has become intense. Recent graduates as well as current practitioners are encouraged by marketing firms to look at an overseas experience of teaching as a means of broadening their life as well as professional experience.

The fluidity of education across cultural boundaries provides the context for an exploration of the necessity for teachers to understand their own world-view and its impact on their practice. A definition of world-view offered by Wright provides a scaffold for the paper's discussion:

World-views...are like the foundations of a house: vital but invisible. They are that **through** which, not **at** which a society or individual normally looks; they form the grid according to which humans organize reality, not bits of reality that offer themselves for organization. They are not usually called to consciousness or discussion unless they are challenged or flouted fairly explicitly, and when this happens it is usually felt to be an event of worryingly large significance. (Wright, 1992, p.125)

World-view is something that is embedded in the person, it provides the window through which people view the world in which they are living and with which they interact. Teachers crossing into cultures different to their own can be largely unaware that they take with them an embedded and largely unchallenged view of 'how things are'. Such views have shaped their educational practice, and have provided a basis on which they have based assumptions about, among other things, learners, learning, teachers, schooling and teaching. Teachers who have lived and worked within the Australian educational context are products of a dominant culture, for example, that values individualism above collectivism.

A clear contrast between the world-view of Western-based teachers and that of students from a culture with a traditional Palestinian Arabic world-view will provide just one illustration of the

need for teachers to exercise extreme caution when crossing cultural boundaries. Of necessity the first sections of this paper are descriptive and in narrative format. Wright (1992) has written that most world-views provide the stories through which human beings can view reality and that narrative was the most characteristic expression of world-view. Listening to the telling of stories of people-groups to learn their views of the world necessitates time spent on attending to their narrative.

This section of narrative draws from the writings of an Arab Palestinian psychiatrist Marwan Adeeb Dwairy. He has written about the traditional Palestinian Arab world-view and through his discussion of Arab history and current cultural practices has sought to raise the consciousness of non-Arabs working with Arabs in counselling, teaching and therapeutic roles. As a professional trained in psychiatry through the Western education system Dwairy challenges other Arab, as well as non-Arab, professionals to re-consider their own pre-suppositions, or world-views, underlying their practice in the light of understanding gained about the different world-view of the traditional Arab.

As we begin to understand the traditional Arab world-view we can begin to grasp more clearly some of our own world assumptions and pre-suppositions. We will also have cause to reflect specifically on some of the issues that may confront a Western trained and immersed educator working among students from traditional Arab backgrounds. Most importantly, we will begin to understand the breadth of issues that can confront educators when they work amongst any people with world-views different to those that have shaped their own behaviours and ways of thinking.

NARRATIVE FOR UNDERSTANDING

When examining Arab history, four definite periods can be identified each representing a distinct layer in the Arab cultural structure (Dwairy 1997). The period preceding the emergence of Islam in AD622 found most Arabs living on the Arabian Peninsula, Syria and Iraq in tribal groups many of whom were nomads and some who were settled cultivators and tradespeople. The main cultural characteristics of the social system were authoritarianism and collectivism, and age and gender were the main factors in the authority structure. Collectivism included the nuclear and extended families as well as the whole tribe, and honour belonged to an individual through membership in a large whole. "Collectivism can ... be defined as a cluster of attitudes, beliefs and behaviours toward a wide variety of people. The difference can be expressed by the range of social 'concern', which refers to the bonds and links with others" (Darwish and Huber, 2003, p.48).

Following the emergence of Islam in the Arabian Peninsula early in the seventh century a new empire was founded as Arab-Islamic armies conquered surrounding countries. The style of life changed during this period from predominantly nomadic to predominantly settled: trade flourished and large buildings and mosques were constructed during this time. The period from the beginning of Islam until the middle of the fifteenth century is known as the glory days of the Islamic empire (this same period is known as the 'Dark Ages' in European history).

During that period new Islamic values entered Arab culture. Although Islam brought new values as well as laws to Arab society, it did not challenge its classical collectivism and authoritarianism. Collectivism and authoritarianism were no longer limited to only within the tribe but extended to the Islamic state as well. People submitted to both tribal and Islamic law within a tribal and Islamic collectivism. (Dwairy, 1998, p.8)

Arabs held a special place within the Islamic empire because the Islamic holy book (*Qura'an*) was written in Arabic and the prophet Muhammed was an Arab. Arabic language and culture became dominant and Arabic became a symbol of educational status. Known to historians as the Arab Renaissance it was during this time that Arabs contributed to knowledge in areas as diverse as

philosophy, medicine, occult sciences and alchemy and magic. Arabs focused much study during this time on the linguistics of their language in an attempt to impose rules for interpretation of their holy scriptures.

Between the fourteenth and eighteenth centuries the Arabs were ruled by other nations. "During this period, the Arabic identity became distinct from the Islamic one. Arabism became the ideology of many organisations that emerged to fight for the independence of the Arabs from the Ottomans" (Dwairy, 1998, p.10). During this period of stagnation, collectivism and authoritarianism continued and enabled the Arabs, through their tribal allegiances, to resist some of the Ottoman rulers.

Since the nineteenth century the Arab world has been exposed to European culture in a variety of forms and some parts of the Arab world were ruled by Britain and France. Many Western schools brought Western values into the school curriculum. Several Arab scholars were educated in Europe and became impressed by the liberalism and humanism that emerged after the French Revolution. In the twentieth century, as a result of the development of communication and mass media, Western culture invaded almost every section of the Arab world, introducing the ideas of individualism and liberalism.

The exposure of the Arab world to Western liberalism challenged the fundamental authoritarianism and collectivism of Arabic society. In the last two centuries, the cultural debate has focused on the questions of traditionalism versus modernity, and authenticity (*asala*) and specificity (*khususiyya*) versus Westernisation. These issues are raised in various areas; education, interpersonal relationships, familial style, entertainment, and many other social-political aspects. (Dwairy, 1998, p.11)

While varied in their political systems and economics the tensions between traditional Arab world-views and the influence of Western thinking on Arabs exist in all Arab nations.

Despite the independence of Arab states, most Arab regimes are not democratic and are not meeting the needs of their people. Many areas are lacking basic civil institutions and services such as schools, clinics, hospitals...people feel marginalized; are not allowed to criticize the political process. (Barakat, 1993, p.270)

Barakat described features that summarise the main characteristics of the Arab world today:

...integration of the area into the world capitalist system; social and political fragmentation; the centrality of religion, or, conversely, the loss of religious faith and return of the *jahiliy-ya*; the absence of scientific and future-oriented rationalism; repressive family socialization and neopatriarchy; the subjugation of women; the dominance of traditionalism over creativity and modernity; duality of Westernisation and *salafiyya* (ancestralism); disequilibrium in the Arab ego; and the prevalence of a traditional mentality. (Barakat, 1993, p.270)

While collectivism stemmed from the early *Aljahiliyya* period, individualism emerged after exposure to Western culture. Within the collectivistic style, the individual gives up the self and obeys the will of the in-group that is represented in norms and values.

On the personal level, living for centuries in a hierarchical society, Arabs alternate during life between these two statuses, authority or ruled, depending on age, gender, and social context. They move from being ruled as children and youngsters, to being rulers when they get older and establish families...unlike Western culture, the transition from being a ruled child (or woman) to an authority when an adult (or mother) is extreme. (Dwairy, 1998, p.18)

Dwairy describes Arabs as belonging to one of three possible groups with different levels of acculturation; the 'traditional', the 'bicultural' and the 'Westernised' groups. He further states that the majority of Arabs belong at the traditional end of the continuum, that

the vast majority of Arabs comply with the collective values at the expense of the self and accept the hierarchical structure of authority. They still adopt authoritarian collectivism in their familial, interpersonal, and social relationships. Education and socialization in homes and schools is still authoritarian. (Dwairy, 1998, p.22)

He also maintains that it is mainly the educated middle class Arabs living in urban areas that fit into the bicultural category. The concept of a continuum of acculturation is important for educators who should be mindful that they might work with Arab students, or indeed students from any people-group, operating from across a wide spectrum of world-views.

IMPLICATIONS OF THE TRADITIONAL ARAB WORLD-VIEW NARRATIVE FOR EDUCATORS

Two surveys conducted among Arab children and their families' revealed significant characteristics that would be largely unfamiliar to a Western educator working from a Westernised world-view approach. A survey of Arab parenting styles in the early 1990s (Dwairy, 1998) revealed the following characteristics.

- Arab parents do not tolerate deviation from their expectations.
- The most common form of socialisation methods used by parents were behavioural techniques and punishment.
- The vast majority of parents reported they would use any method to make their children adhere to authority.

In the early 1990s, a survey was conducted to determine the socialisation experiences of children in Arab schools (Dwairy, 1998). There are three significant findings from the survey that have implications for Western world-view oriented teachers.

- Arab students and teachers display violent behaviour frequently.
- Large percentages of students report a high incidence of verbal, as well as physical, violence displayed by teachers and other students.
- The most commonly applied response to violence was passivity and few students would report peer violence towards them to a teacher.

The three main methods of socialisation in Arab society are verbal methods, punishment and very little room for experimentation (Dwairy, 1998). The verbal methods employed by teachers and parents within the traditional Arabic education practice include explanation, direction and moralisation. An analysis of the content of the explanations and directions reveal that they are rule rather than being based on reasoning. Children are told what to do and how to behave and when pushed in reasoning, moral explanations based on social norms and values are given.

The expression *a'eb*, which means 'shame', or *haram*, which means 'forbidden by God', is often given to questions raised by children. The loss of face of parents in public is another strategy used by Arab parents. When verbal methods fail to prevent children from acting in a forbidden way punishments are applied as an external and direct method of control. "Physical punishment is not considered abusive and is appreciated in Arabic society" (Dwairy, 1998, p.59). Considered the most efficient method of discipline by Arab parents and teachers its over-use or abuse by a teacher is rarely challenged by an Arab parent.

Due to the need to maintain family honour and avoid causing shame to their parent Arab children have little scope for experimentation.

Arab children do not have trial and error experiences that can help them learn about the environment and the self from the natural consequences of their behaviour. Parent's responses are the only consequences they know. Because of this, they lack the experience that helps to develop personal judgement and decision-making and problem-solving ability. (Dwairy, 1998, p.60)

How an Arab child learns is impacted on significantly by the lack of opportunity to experiment. The development of internal self-control, a feature valued highly in Western educational settings where the focus is on an individual's growth and development, does not occur for children growing up within the traditional Arab world-view. The parents and the tribe provide the external control mechanisms on behavioural choices. "Since the consequences of behaviour are determined by the parents and the social environment, these external factors, rather than inner self-control, control behaviour in the Arab society" (Dwairy, 1998, p.61).

An educator with a Western world-view is likely to view many of the behaviours described above from an individualist viewpoint and with a limited understanding of the world-view scaffolding of traditional Arab culture. An educator operating from the typical Western position, for example, that students have a range of behavioural choices and are personally accountable for their actions would struggle to understand the violent behaviour of their traditional Arab students.

The Western theory of locus of control, for example, that proposes that people operate from either a largely internal or externally driven locus of control, does not accommodate the traditional Arab world-view or experience. Such a theory assumes an individual to have grown in a culture where high value is placed on the development of an internal locus of control, a feature common to Western individualistic oriented societies. We have seen from the narrative above that traditionally raised Arab children find their behaviours are controlled by external agencies. This is an effective way of maintaining the collectivist world-view and making the family the central and controlling feature in an Arab's life. A collective will have little power over a person who does not ascribe power to it and from infancy an Arab child has learnt of the power of their collective through their own and, observation of other's, experiences.

Another feature of Arab students that would puzzle an educator working from a Western world-view is their conformist and dependent behaviour. In Western society where independence is highly regarded dependence is likewise interpreted as immaturity. In a society that does not encourage individual independence and where conditions support conformism, conformity and dependency are natural results. They are a mature way to adapt and survive in the social system (Dwairy, 1998). Classroom practices that do not take account of this strong tendency to conformity may challenge and disorient a student resulting in behaviour that is puzzling to the teacher and also affects the learning of the student.

Children brought up within the traditional Arab custom have been found to have exceptionally good memories for facts and rote learning is a common feature in Arab classrooms. Dwairy (1998) found that Arab children perform poorly in tests that require flexibility and analytical thinking. When asked to compare two concepts, for example, to find a similar property or when offered problematic situations and asked how they would respond, Arab children performed poorly when compared to their non-Arab peers. Having had little opportunity to evaluate a problem and make a personal decision Arab children find such questions difficult. Learning has focused on being told the right answer and there is little to no practice in analysing and reasoning a problem.

SUMMARY COMMENTS

The above brief and, in many ways, simplistic narrative of the world-view of the traditional Arab is one example of a world-view that is quite distinct from that of the Western world-view. It has taken the reader some time to read the narrative and further time to begin to understand a view of learning and the world that is a stark contrast to Western views of such matters.

In listening to the narrative of one people group, we may have begun to gain insights that will inform the practice of teachers who work cross culturally in educational settings. The story of the traditional Arab provides an example of the critical need for teaching practitioners to understand the world from the point of view of the students. Arising from this understanding a teacher can gain insights into how students learn, why they may behave in particular ways and the place of the family (in its widest sense) in an individual student's life and learning.

Understanding the world-views of their students will assist a teacher to understand how the particular assumptions to learning, knowledge and behaviour brought by him or her to the classroom may clash with those of the students, the students' parents and the wider cultural milieu in which the school is sited. The world-view of the traditional Arab is only one example of a world-view that is in a clear contrast to the world-views of teachers who have grown and been educated within a Western society. Teachers who work within other cultural settings, for example, Asian cultures, indigenous Australian cultures, or within Pacific Island cultures will encounter students operating from world-views different to that of their own. Outside the scope of this discussion but important for future discussion are questions surrounding the pedagogical and curriculum decisions as well as classroom management strategies teachers make when working within a cultural setting different to their own. Teachers who work, for example, in a traditional Arab school setting may be faced with issues of violence between student and student and between student and teacher that occur within a cultural context that is accepting of behaviour that would be condemned in a Western school setting.

As teachers explore their own world-view narrative and begin to develop an appreciation of their view of the world, of 'the way things are' they will have a heightened awareness of the assumptions underlying their educational practices. With the increasing flow of people between nations teachers will require intercultural competencies hitherto undemanded. The need for teaching practitioners and pre-service teachers to develop self-understanding and self-awareness has never before been so critical. The current developments within pre-service and teacher professional development of the reflective practitioner model will contribute in some way to the formation of critically self aware teaching practitioners. Further developments in teacher education are needed to equip teachers to work ethically and with skills of critical reflection in a global setting where educational practice and theory vary from culture to culture.

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