

**Towards the construction of a framework for the description and classification
of international schools and other schools in an international context**

J.C.Cambridge and J.J.Thompson

Centre for the study of Education in an International Context.

University of Bath, Bath BA2 7AY

First published in

Collected Original Resources in Education Volume 24, Number 1

Fiche 3 CO9

March 2000

ISSN 0308 - 6909

ABSTRACT

A growing population of schools around the world serves the educational needs of globally mobile students. This culturally diverse constituency includes the children of diplomats and employees of multinational companies, parastatal bodies and non-governmental organizations. This paper does not attempt to define international schools or international education but reviews previous attempts at defining international schools, and presents a framework for categorising them as a subset of 'schools in an international context'. The framework and the methodology informing its construction are described. We propose that the biological concept of diversity can be applied to the description and classification of these schools. Numerical data about the composition of teaching faculty and student body can be used to calculate diversity indices which, in combination with nominal data about curriculum, may be applied to locate each school within a multidimensional hypervolume.

INTRODUCTION

It is our contention that there is no single definable entity which can be identified as 'an international school'. This is because we cannot defend a single linear model of what constitutes international schools and other schools. We do not accept the view that international schools are where international education (however that is defined) takes place uniquely; an international school may offer an education that has no claims to be international, while an international education may be experienced by a student who has not attended a school that claims to be international (Hayden and Thompson, 1995). The term international school is commonly used, yet there appears to be little agreement as to what constitutes such a school. This is because up to now the literature has generally referred to the historic use of the term as institutions have styled themselves as international schools. Instead, we argue that international schools should be viewed as one, or more likely several, groupings within the wider framework of 'schools in an international context'. This would be of immediate practical advantage to the researcher in the field because it would place all schools within a conceptual framework which could then assist in the construction, for example, of matched samples for the purposes of further research.

We wish to test the statement that it is possible, by a process of induction, to identify clusters of schools whose resemblance to each other is according to their positions in a multidimensional matrix whose dimensions *inter alia* are available in published documents and which comprise:

- Composition of teaching staff;
- Composition of student body;
- Curriculum and assessment.

EARLIER CLASSIFICATIONS OF INTERNATIONAL SCHOOLS

The 1964 Yearbook of Education acknowledged the existence of some 50 international schools. Leach & Knight (1964) identified seven types of international school categorised into three groups:

1. National schools overseas.
2. International Schools Association (ISA) member schools.
3. Profit making schools.

From this source, it is apparent that membership of the International Schools Association was important in identifying a school as 'international' in the 1960s. The stance adopted towards profit-making schools at this time is also fascinating. A school operated for profit was deemed to be unsuitable for designation as 'international'. The implication that a non profit-making school is inherently superior to, and more 'international' than, a profit-making one seems difficult to justify.

Hayden & Thompson (1995) reviewed the growth of international schools over the past thirty years or so from a number of approximately 50 (Leach and Knight 1964) to a figure in the region of 1000 (Matthews 1989). Pearce (1994a) stated that there are over 2000 schools around the world which specifically care for the children of expatriates but this estimate includes institutions which we would argue are schools with an 'encapsulated mission' (Sylvester, 1998), that is to say representatives of particular national cultures which have been transplanted in another country.

Ronsheim (1970) described international schools as promoting education with international understanding. She argued that international schools should have a multinational student body and teaching staff, and that such schools must operate either a multinational or international curriculum. Ronsheim's international school must offer bilingual teaching, and teach the local language. The school would have

international sponsorship, allow no single political ideology to dominate, and not operate for profit. Such a tight definition excludes many schools who classify themselves, or are indeed classified by others, as being international.

Terwilliger (1972) addressed the issue of an expanding international community and the consequent demand for international schools. He argued that, for a school to be classified as international, it must enrol many students who are not host nationals, have a multinational board, multinational teaching staff, study at least three languages and operate a curriculum that reflected the instructional practices of many national systems. Many schools would fulfil some of his criteria, but possibly not all of them.

Sanderson (1981) identified seven types of international schools comprising: schools which have 'consistently tried to develop and practise a distinctive form of international education'; schools which do not offer the International Baccalaureate but which 'claim to be international because their students come from many countries'; schools founded as expatriate national schools (overseas schools), originally rooted in a national tradition; schools founded as expatriate schools, but more recently having begun to adopt more international aims 'usually implemented by adopting the International Baccalaureate'; regional or bi-national schools, such as the nine European schools; those based on two educational traditions; and, 'internationally-minded schools which have traditionally welcomed foreign pupils and attempted to create an international dimension within the school'.

Pönisch (1987) classified different types of international schools into eleven categories: 'according to their historical development and by the groups of pupils they serve'. While such detailed classifications highlight the diversity of international schools, they also prove problematic since the disparate nature of these schools leads to overlap between categories.

Both Matthews (1989b), and Hill (1994) share the view that an international school is distinctive due to a particular school ethos. Matthews (1988b) commented that: 'if international schools are linked by anything, it is precisely that set of informal values and behavioural styles which may be termed somewhat loosely ethos.' Hill (1994) agreed with this notion, stating that such an ethos: 'may be defined as preparing students for global citizenship by building on the principles of tolerance, international cooperation, justice and peace.' He argued that the most obvious characteristics shared by international schools are the diversity of input from teachers and students, and the social adaptability of the students. Hill (1994) continued to focus his definition by comparing an international school to a national school. He described an international school as being one: 'whose students and staff are representative of a number of cultural and ethnic origins, and where the International Baccalaureate or a number of different national courses and examination are offered and where the ethos is one of internationalism as opposed to nationalism.' A national school by comparison would have students and teachers from predominantly one country, and the curriculum and examinations would also be from that same country. Such factors would result in a national, as opposed to an international school ethos.

Gellar (1981) argued that students perceived international schools in a different manner, explaining that: 'because of the special circumstances of life in a small community of transient foreign nationals, the school often plays the central role in the life of the community. It becomes the centre of the child's social life,... in contrast to the peripheral role that schools play in the home country.' This characteristic of international schools was also noted by Burleigh (1994) who commented that for some students in international schools: 'the school superseded the family group in which the student felt like a valued participating member.'

Gellar (1981) also claimed that international schools were identifiable because of the above average ability of their teachers. Little if any evidence was provided to support

this assertion. Beside his observations regarding students and teachers he commented that it is: 'not so much curriculum but what takes place in the minds of the children as they work and play with the children of other cultures and backgrounds. It is the child experiencing togetherness with different and unique individuals; not just toleration, but the enjoyment of colour, dress, belief perspective. We would define international by what schools do in nurturing such understanding.'

Jonietz (1991) divided international schools into three categories:

- National schools overseas that offer national education to expatriates;
- Limited enrolment multilingual or multinational schools, and;
- Evolving multicultural, multilingual and multinational international schools.

Such a classification is attractive but the formulation of a specific definition, as follows, may be so rigid that it excludes many institutions that display some but not all of the characteristics.

'International schools serve students and teachers living outside their home nations in a model of multicultural, multilingual and multinational education that uses English language instruction and offers a formal international curriculum and exiting examinations for secondary students' (Jonietz, 1991)

As Pearce (1994b) comments: 'the title international school can mean anything from a school typical of those in the home location that happens to be overseas, to a sophisticated cultural compromise, according to local taste'. For future classification it may be more accurate to discuss schools which operate in an international context. We consider schools in an international context to comprise a variety of school types, only a proportion of which may be popularly described as international schools. Subsets of this group would include company schools making provision for the children of company employees, schools providing an education abroad in an

expatriate national system, and schools in which the student body comes wholly, or in the majority, from the host population. They would include not only institutions whose explicit mission is to foster some form of internationalist ideology, but also those whose internationalism is more pragmatic.

Hayden and Thompson (1996) identify five core 'universals' for the identification of an international education:

- diversity in student cultures;
- teachers as exemplars of 'international mindedness';
- exposure to others of different cultures outside the school;
- a balanced formal curriculum, and;
- a management regime value-consistent with institutional philosophy.

Sylvester (1998) identifies the universals listed above with 'inclusive' school missions, which he contrasts with 'encapsulated' school missions which display:

- limited diversity of parent/student cultures;
- teaching limited to culture-specific pedagogy;
- a tendency for the school to manage the multicultural experience;
- a narrowly targeted curriculum, and;
- a value system as a product of an imported school culture.

Thus many such schools in an international context cannot be considered to provide an international education, as defined in terms of the universals listed above, because they provide globally mobile expatriates with a means of travelling in tunnels, by isolating their children's educational environment from exposure to local culture.

It appears that the meaning of the term 'international school' may depend less on the characteristics of the school itself, and more on the characteristics, purposes and socio-economic positions of the people using the school. For some parents, the

opportunities for broadening the cultural horizons of their children at school are most important, whereas for others the need to facilitate a smooth return to the educational system in their home country is a priority. A school can serve simultaneously many different constituencies with a high or low turnover. Some students attend the same school for a long period of time, whereas others are short term users of its services; for some of the 'high turnover' constituency of students, the school will be their only experience of education outside their home country, whereas for others the school will be one of many.

Research into schools in an international context requires the description and analysis of aims, purposes and processes. The most appropriate way to collect these data may be from documents, interviews and observation. This qualitative approach would be complemented and guided by a descriptive and analytic framework derived from quantitative analysis of data from the schools. We wish to propose how such a framework would be constructed, using data from published sources where possible.

IDENTIFYING SCHOOLS IN AN INTERNATIONAL CONTEXT

The continuing growth in the number of schools affiliated to either International Schools Services (ISS) or the European Council of International Schools (ECIS) suggests a desire for many institutions to identify themselves within markets which serve particular constituencies. Figure 1 presents an initial proposal for a conceptual framework which identifies a number of sources of data about schools in an international context comprising publications about the United World Colleges (UWC), European schools (Euro), schools in national systems (Nat), and directories published by ECIS, ISS and John Catt (Bingham, 1997). The shaded area represents schools which offer 'an international education', however that is defined. Certain institutions which are listed in the directories may not be regarded as offering an international education because they cater for clients who are not culturally diverse or

because they are ‘encapsulated’ outposts of a specific national culture; they are located outside of the shaded portion of Figure 1.

We have tried to identify as many sources of information as possible, but this framework should be considered as a provisional statement which is subject to revision as other sources are identified and more information becomes available. Each domain in Figure 1 indicates the possible sources of information about schools located in it. Note that the area of each domain bears no relation to the size of each population of schools.

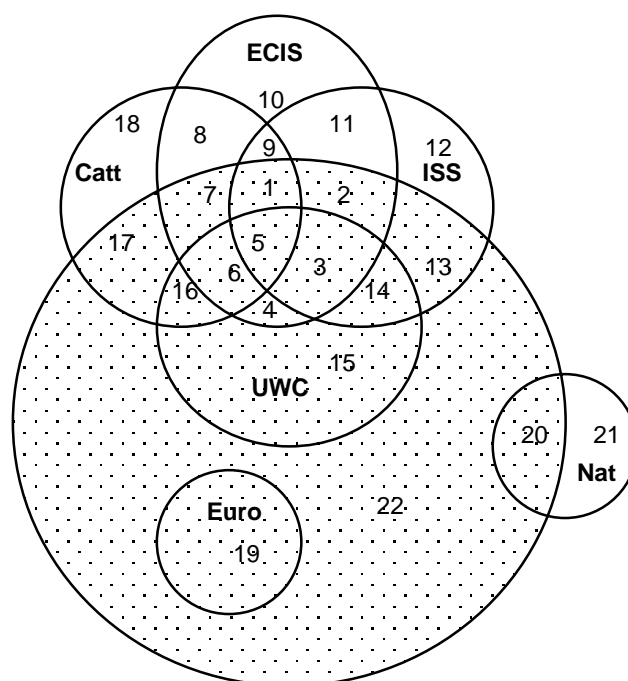


Figure 1:

Sources of information about schools in an international context

Schools which are listed in the ISS Directory of Overseas Schools occupy domains 1, 2, 3, 5, 9, 11, 12, 13 and 14 but some schools may not provide an international education (9, 11, 12). This perspective is supported by the compilers of the directory themselves, who state that :

'inclusion is based on two closely defined criteria: 1) the use of English as the major language of instruction, and 2) the adherence to an American curriculum, either alone or combined with a national or British curriculum. In some cases, where a school with a strictly British curriculum shows a significant enrolment of American students, it has been included, as have schools which are truly international and offer the International Baccalaureate program.' (ISS, 1986).

There is overlap between schools listed in this directory and the ECIS directory, some of which may be classified as schools providing an international education (1, 2, 3, 5), and some that might not (9, 11). Schools in domains 1, 5 and 9 may be listed in both the ISS and John Catt directories. There may also be overlap with schools listed in publications unspecified here.

Schools which are listed in the ECIS International Schools Directory occupy domains 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 and 11 but some schools may fail to match criteria for classification as providing an international education (8, 9, 10, 11). There is overlap between schools listed in this directory and the ISS directory, some of which may be classified as schools providing an international education (1, 2, 3, 5), and some that might not (9, 10). There may also be overlap between schools listed in this directory and the John Catt directory, some of which may be classified as providing an international education (1, 5, 6, 7), and some that might not (8, 9). There may also be overlap with schools listed in publications unspecified here.

Schools which are listed in the John Catt directory occupy domains 1, 5, 6, 7, 8, 9, 16, 17 and 18. Some institutions may provide an international education (1, 5, 6, 7, 16, 17), whereas others may not (8, 9, 18).

The United World Colleges, which are clearly identifiable as schools providing an international education in the form of the International Baccalaureate programme,

occupying domains 3, 4, 5, 6, 14, 15 and 16. Some institutions may advertise in the ECIS directory only (4), the ISS directory only (14), or the John Catt directory only (16) or in pairs of the three directories (3, 6), or all three of them (5) or none (15).

The European schools occupy domain 19 and are located entirely within the grouping of institutions which provide an international education.

Some schools operating within a state system may be classified as schools providing an international education (20), whereas others in the same system may not meet the criteria for inclusion (21).

Schools which do not advertise in the directories specified above occupy domain 22; they may stand alone or may be part of a more tightly coupled group of schools. This amorphous domain is likely to comprise many schools, and groups of schools, with which we have previously had no contact, nor do we have knowledge of them.

ANALYSIS OF DATA FROM SCHOOLS IN AN INTERNATIONAL CONTEXT

Schools in an international context show great variety, so how can they be matched with each other for the purposes of drawing samples? Our review of earlier classifications indicated a consensus that schools in an international context show diversity in three respects; in terms of the curriculum and assessment they offer, among the student body, and among the teaching staff.

Curriculum and assessment

Schools show variety in terms of the types of curriculum which they offer to different age ranges of students. Schools can offer curriculum content in terms of a particular national educational system, for example 'US curriculum' or 'British curriculum' or

they can offer an 'international curriculum' such as the International Baccalaureate Diploma (IBDP) or the IB Middle Years programme (IBMYP). These are nominal classes (Cohen and Manion 1989) which can be used for the purposes of counting of frequencies and sorting, although they cannot be used for many other forms of quantitative analysis because they do not constitute ratio variables.

Some schools provide for different age ranges among the student body. Some only have students over the age of 16 years. On the other hand, some schools operate as senior high schools with students from about 14 years of age, or as junior high schools with students only up to 14 years. There may be combined junior and senior high schools, and others may be senior and junior high schools combined with educational provision for younger children, as young as kindergarten age. Thus, schools may cater for a wide or narrow range of students' ages; indeed, many schools listed in the ECIS and ISS directories only function in the primary sector, with no high school provision.

Many schools in an international context offer the International Baccalaureate programme, at least after age 16 to Diploma and/or Certificate level. These would provide a baseline for comparability between schools because they would be institutions which subscribe to the values of the International Baccalaureate. However, there are other institutions which would make an interesting comparison with the IB schools because they offer General Certificate of Secondary Education Advanced Levels (GCSE A levels), not IB. Such schools might be encapsulated 'English' schools which could be used, for example, to test the proposition that a school must offer a curriculum based on the International Baccalaureate in order to provide an international education.

Furthermore, schools which offer the Advanced International Certificate of Education (AICE) could also justifiably make claims about providing an international education:

'The AICE curriculum is designed for international use. It seeks to avoid national or cultural bias, and does not exist to serve the educational purposes of any individual country. Curriculum content is chosen specifically to be of world-wide relevance.' (UCLES 1997).

It would therefore be possible for the constructs of international education proposed by IB and AICE to be compared and contrasted.

It may be argued that specification of the assessment arrangements made available by a school provides concrete objective evidence of its cultural orientation, whether it is towards the IB, AICE, A-levels, American SAT and AP, or other examinations with origins in national educational systems. Schools in an international context may offer IB, either alone or in combination with another examinations, which may be internally developed or from a range provided by a variety of assessment boards. Some schools offering the IB Diploma programme (IBDP) also offer the IB Middle Years (IBMYP) and Primary Years (IBPYP) Programmes. This is not universal, however, for there are many schools which offer Cambridge International General Certificate of Secondary Education (IGCSE), or other examinations to their students below the age of 16 years. The IBMYP has different assessment objectives when compared to GCSE and IGCSE; it would be of interest to determine how selection of one of these pre age 16 curricula relates to the educational values of the institution.

Data concerning curriculum and assessment arrangements are published in the various directories, and ECIS (1997b) presents a systematic analysis of curriculum and examinations offered by its affiliates. Schools may be arranged in a two

dimensional matrix (Figure 2), according to their assessment arrangements up to age 16 years (rows) and after age 16 years (columns). Note that certain institutions do not have any students under the age of 16 years, and therefore their provision for that age group is ‘None’.

	IBDP/CP	AICE	A level	AP/SAT	Other	None
IBMYP						
IGCSE						
GCSE						
O level						
Other						
None						

Figure 2: Assessment in international schools (Rows = pre 16; columns = post 16)

Locational data

Schools in an international context are distributed among many different geographical locations. Latitude and longitude coordinates provide concrete objective data about location, but location according to country or region may be sufficient. The calendar of the school year provides an arena for interaction between the location of an institution and curriculum and assessment. For example, the International Baccalaureate provides opportunities for examinations in May and November, with the former mainly in the northern hemisphere and the latter in the southern hemisphere. Which schools located in the Southern hemisphere follow a Northern hemisphere school year? Is it possible for schools in the Northern hemisphere to follow a Southern hemisphere calendar? One may look for distribution of November and May IB entries, by reference to data either from schools or from information from IBO.

Examinations:	May	November
Northern Hemisphere		
Southern Hemisphere		

Figure 3:

Timing of examinations in schools located in Northern and Southern Hemispheres

These data can be presented in the form of a two dimensional matrix (Figure 3), with location (rows) and school year in terms of May or November examination entries (columns). Furthermore, one may identify schools catering for expatriates which encapsulate other national cultures, for example, schools in London which operate according to the Japanese school calendar. How might we interpret these data? What does this indicate about orientation of a particular school culture towards host country local community and/or the international community?

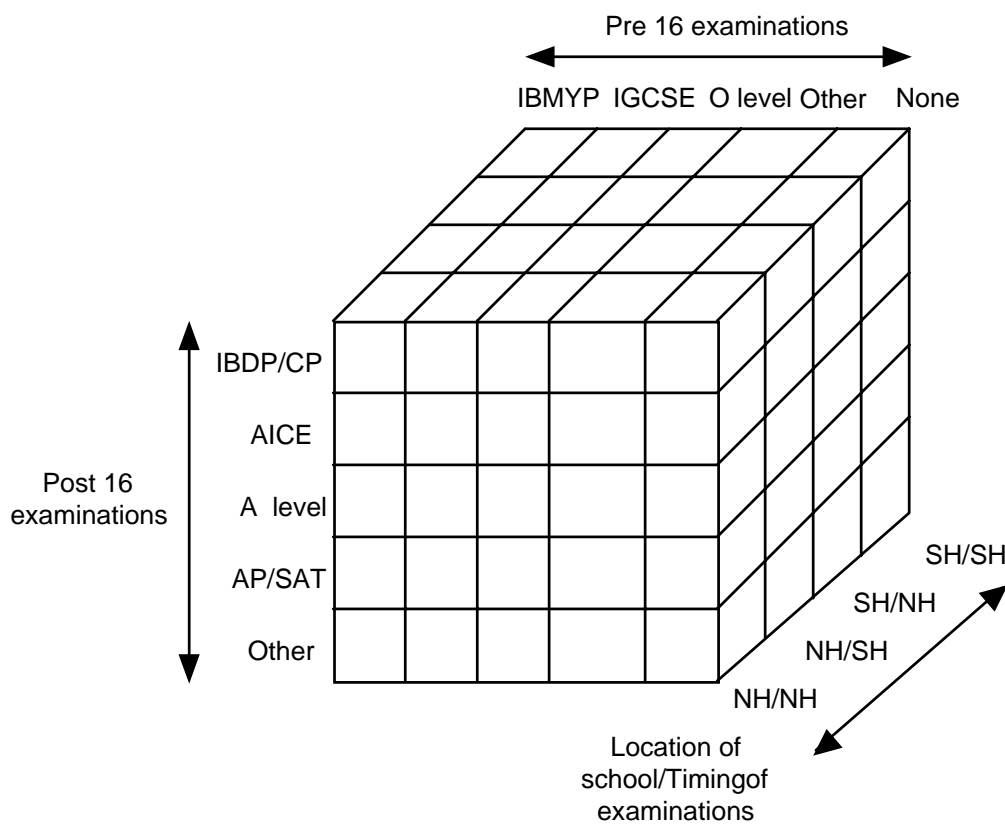


Figure 4: Curriculum variables arranged in three dimensions

Variables describing curriculum may be synthesised to form a three dimensional matrix which summarises the distribution of schools in terms of (a) curriculum offered up to age 16 years, (b) curriculum offered beyond age 16 years, and (c) location of school and timing of examinations (Figure 4). Such a matrix resolves institutions into about 100 cells, depending on how 'other' categories are treated, of which only a few could be filled by several candidate schools with some ease. Some cells might be entirely void.

Quantitative data about students and staff in schools in an international context

Data which describe the structure of the student body and teaching staff of a school can be presented in the form of discontinuous ratio variables (whole numbers) which are capable of quantitative analysis. Students or teachers can be enumerated by nationality, but the construct validity of this class can be challenged. For example, how does one categorise individuals with dual nationality, or those who are stateless refugees? In the case of some students, their *de facto* national cultural affiliations are not congruent with their *de jure* nationalities; some of these may be so-called 'third culture kids' and 'global nomads' (Langford 1998). This would be an important consideration in a study of cross-cultural comparisons because culture and nation are confused with each other in many studies, and it is not valid to assume cultural homogeneity within national borders (Lachman, 1997). However, we regard nationality to be a construct which is robust enough to be applied with validity and reliability in most cases since it refers to an objective legal state of affairs, provided that it is supplemented with other constructs which distinguish between 'culture' and 'nationality' as the occasion demands.

If researchers collect primary census data for themselves, they can define whatever categories of information they require which are fit for purpose. Most are unlikely to do this, however, particularly if the activity is intended for the selection of schools for

further study. Such researchers are more likely to depend on data from secondary sources, such as directories of schools. ECIS (1997a) presents data about the number of nationalities of teachers and students represented in each school, but this does not include analysis of which nationalities are represented. The ISS Directory presents data about the frequency of nationalities of teachers and students in four classes: US, UK, Host Country, Other. The imposition of these classes presents a methodological problem in the interpretation of data from secondary sources.

Analysis of these numerical data may be performed in three ways:

- Analysis of raw numbers;
- Calculation of proportions;
- Calculation of weighted indices, such as the diversity index.

Abundance measurements of populations can be calculated in terms of elements assigned to classes (Engen, 1978). In the context of educational research, numbers of individual teachers or students correspond with 'elements' and national groupings correspond with 'classes'.

Raw numerical data about 'the number of British students', 'the number of US teachers' or 'the number of nationalities of students' in the school are of little use other than for matching institutions by size. The calculation of proportions (the percentage of British among the student body, the percentage of the staff who are Americans) standardises the data for size, and may be more useful for other types of comparison.

We may wish to describe institutions not only in terms of the number of nationalities represented among the staff and students but also by their relative proportions. An index of diversity can be calculated for an institution by assigning each nationality a weighting according to the proportion it takes up of the total population. Schools could have the same numbers of nationalities represented among the students but in

different proportions; the diversity index could assist us in the resolution of comparisons between them.

Diversity

Diversity is a concept borrowed from population and community biology which is concerned with species richness, (the total number of species in the community), and equitability (how individuals are distributed among the different species).

ECIS (1997a) gives information about 'nationality richness' of schools (the number of nationality classes represented among staff and students), but gives no indication of equitability (the numbers of elements, defined as individual staff and students, assigned to each nationality class). The ISS Directory of Overseas Schools gives information about equitability but only a limited account of nationality richness (four classes only are presented which comprise US, UK, Host, and Other).

Numerical values for diversity of teaching staff and student body can be calculated using Simpson's index of diversity (Simpson, 1949; Slingsby and Cook, 1986).

$$D = N(N-1) / \sum n(n-1)$$

where D = diversity index;
 N = total number of elements;
 n = number of elements in each class;
 • = sum of.

This index is well known to the extent that it is included in the content of many senior high school courses in biology. Cambridge and Cowlshaw (1996) proposed that it might be applied to description of schools in an international context by assigning a weighting to each class, according to the number of elements each contains. A highly

diverse teaching staff contains similar proportions of elements (individual teachers) from each class (nationality) because there is no predominance of any one class. Two schools, each with 100 staff, can have different diversity values. For example, one comprising 70 US, 10 UK, 10 Host and 10 Other teachers is less diverse regarding teaching staff ($D = 1.9$) than another with 25 US, 25 UK, 25 Host and 25 Other ($D = 4.1$).

Validity of analysis of secondary data challenged

The methods of data analysis described above offer few problems when applied to primary data where frequencies of elements assigned to discrete nationality classes are presented. However, the ways in which data are presented in the directories limit the scope for secondary analysis. Take the examples of two international schools, one located in France and the other located in the United Kingdom. In the former, there are four classes of elements (students or teachers) comprising US, UK, host country nationals (who are French) and members of 'Other' nationalities who are not US, UK nor French. In the latter example, there are only three classes, because elements assigned to the 'UK' class are also members of the 'Host' class. This situation breaks a fundamental rule of numerical taxonomy that 'each element is a member of one and only one class' (Engen 1978) because, in this case, 'UK = Host'. 'Host' nationality is therefore a class which lacks construct validity, and this in turn invalidates the calculation of proportions and weighted indices, such as Simpson's index of diversity, from such data. Furthermore, the calculation of the diversity index is also invalidated by the inclusion of the highly variable class entitled 'Other' nationalities because it may comprise elements from only one nation or it might be an amalgamation of elements from many nations.

The validity of comparisons between diversity indices may also be challenged on the grounds that it is not clear whether calculation using Simpson's expression results in the generation of a 'true metric coefficient' (Aldenderfer and Blashfield 1984), although it is assumed that data generated in this way can be arranged in a rank order.

Comparisons between diversity indices would also be unreliable if institutions had different numbers of nationalities hidden within the 'Other nationalities' class. Kikkawa (1986) observes that 'this index diverges enormously when the total number of species is increased'. Presumably, the retention of only four nationality classes would enhance the validity of comparisons between diversity data by restricting the

scope for such divergence; a case of the enhancement of validity at the expense of reliability?

Relationship between number of nationalities and 'Other' nationalities class

Many schools have an entry in only one directory but some are listed in two, presenting opportunities for triangulation of data. A continuum could be constructed in two dimensions representing 'Number of elements assigned to "Other nationalities" class' from ISS data, and 'Number of nationality classes reported' from ECIS data.

Relationship between staff and student nationality classes

The relationship between proportions of students and teachers from particular nationalities is also of interest. Does the market encourage the establishment of encapsulated schools where students of one nationality are taught by their compatriots? What correlations are observable between staff and student compositions? What interpretations might we place on such observations? What do such demographic data indicate about the supposed internationalism about some schools in an international context?

POSSIBLE THREATS TO VALIDITY

1) The ISS Directory classifies staff and student bodies in terms of 'US, UK, Host, Other.' Diversity Index is calculated by reference to the relative weighting of the four variables. What is to be done with schools located in the US or UK, in which case they are 'Host' nationalities themselves? Is a diversity index based on a three category classification comparable with that based on a four category comparison?

2) Between - directory comparisons should be carried out between sources documenting the same year. To what extent do the reporting periods of the directories coincide? To what extent is validity threatened if directories from different years were used for comparison?

3) Grade level records are erratic. Some schools report numbers of students from 'grade 7-8' and 'grade 9 -12', while others amalgamate them. How do we separate schools which extend to grade 12 from those that only extend to grade 10?

4) The ISS Directory breaks down staff and student bodies into four categories whereas ECIS Directory reports 'number of nationalities'. What is the relationship between 'diversity' calculated from ISS data and 'number of nationalities'? To what extent is this measure of diversity a valid concept to begin with, since it provides no indication of the number of nationalities described as 'other'?

SUMMARY

The term 'international school' is frequently used but it cannot be applied to define a single class of institution. We propose that 'international schools' comprise a component part of a wider grouping of 'schools in an international context'. Research into these schools will require complementary approaches which draw together quantitative and qualitative data from a variety of primary and secondary sources. It is proposed that data about schools published in directories can be used for further analysis, and can be applied to the construction of a framework to inform the drawing of samples. Data about the type of curriculum and assessment available in schools, and numerical data about the composition of the teaching staff and student body can be used to describe some characteristics of a school. Analysis of numerical data can be performed in terms of comparisons between raw numbers, calculation of proportions, and calculation of weighted indices, such as Simpson's index of diversity.

REFERENCES

- ALDENDERFER, M.S. & BLASHFIELD, R.K. (1984)** *Cluster Analysis* Sage University Paper series on Quantitative Applications in the Social Sciences 44. (London, Sage).
- BINGHAM, D. (1997)** *The John Catt Guide to International Schools 1997* (Saxmundham, John Catt Educational Ltd).
- BURLEIGH, J.C. (1994)** What works: A study of multicultural education in an international setting, *International Schools Journal*, 27, pp. 46-53.
- CAMBRIDGE, J.C. (1998)** Investigating national and organizational cultures in the context of the international school, in: HAYDEN, M.C. & J.J. THOMPSON(1998) *International Education: Principles and Practice* (London, Kogan Page).
- CAMBRIDGE, J.C. & COWLISHAW, G. (1996)** *Developing a model to describe schools in a international context* (University of Bath, Unpublished seminar paper delivered at CEIC Summer School, July 1996).
- COHEN, L. & MANION, L. (1989)** *Research Methods in Education* (London, Routledge).
- ENGEN, S. (1978)** *Stochastic Abundance Models, with emphasis on biological communities and species diversity* (London, Chapman and Hall).
- EUROPEAN COUNCIL OF INTERNATIONAL SCHOOLS (1997a)** *The International Schools Directory 1997-1998* (Saxmundham, John Catt).
- EUROPEAN COUNCIL OF INTERNATIONAL SCHOOLS (1997b)** *Statistical Survey 1997* (Petersfield, ECIS).
- GELLAR, C.A. (1981)** International Education: some thoughts on what it is and what it might be, *International Schools Journal*, 1, pp. 21-6.
- HAYDEN, M.C. & THOMPSON, J.J. (1995)** International Schools and International Education: A relationship reviewed, *Oxford Review of Education*, 21, 3, pp. 327-45.

HAYDEN, M.C. & THOMPSON, J.J. (1996) Potential difference: the driving force for international education *International Schools Journal* XVI, 1, pp. 46-57.

HILL, I (1994) *The International Baccalaureate: Policy Process in Education* (University of Tasmania, PhD thesis).

INTERNATIONAL SCHOOLS SERVICES (1986) *The ISS Directory of Overseas Schools 1986 /87* (Princeton, NJ, International Schools Services).

JONIETZ, P.L. (1991) *International Schools: developing a consensus of opinion.* (Brunel University, PhD thesis).

KIKKAWA, J. (1986) Complexity, diversity and stability, in: KIKKAWA, J. & D. ANDERSON (1986) *Community Ecology: Pattern and Process* (Oxford, Blackwell Scientific).

KNIGHT, M. & LEACH, R. (1964) *International Schools and their Role in the Field of International Education* (Oxford, Pergamon Press).

LACHMAN, R. (1997) Taking Another Look at the Elephant: Are We Still (Half) Blind? *Journal of Organizational Behaviour* 18, pp. 313-316.

LACHMAN, R., NEDD, A., & HININGS, B. (1994) Analyzing cross-national management and organizations: a theoretical framework, *Management Science* 40, 1, pp. 40-55.

LANGFORD, M. (1998) Global Nomads, Third Culture kids and international schools, in: HAYDEN, M.C. & J.J. THOMPSON(1998) *International Education: Principles and Practice* (London, Kogan Page).

MATTHEWS, M. (1989a) The scale of international education *International Schools Journal* 17, pp. 7-17.

MATTHEWS, M. (1989b) The uniqueness of international education *International Schools Journal* 18, pp. 24-34.

PEARCE, R. (1994a) International Schools: the multinational enterprises' best friends *CBI Relocation News* 32 (November 1994) pp. 8-9.

PEARCE, R. (1994b) Globalization: Learning From International Schools *Mobility* (November 1994) pp. 27-9.

RONSCHEIM, S. (1970) Are international schools really international? *Phi Delta Kappan* 7, 2, pp. 43-6.

SANDERSON, J. (1981) *Education for International Understanding: the mobile pupil and his educational needs* (University of Oxford, MSc thesis)

SIMPSON, E.H. (1949) Measurement of Diversity *Nature* 163, p. 688.

SLINGSBY, D. & COOK, C. (1986) *Practical Ecology* (London, Macmillan).

SYLVESTER, R (1998) Through the lens of diversity, in: HAYDEN, M.C. & J.J.

THOMPSON (1998) *International Education: Principles and Practice* (London, Kogan Page).

TERWILLIGER, R (1972) International Schools - cultural crossroads *The Educational Forum* XXXVI, 3, pp. 359-63.

UCLES (1997) *Advanced International Certificate of Education: An Introduction* (Cambridge, University of Cambridge Local Examinations Syndicate)