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AUTHOR Boufoy-Bastick, Beatrice
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ABSTRACT

The attainment of a cultural identity is a major challenge of social development for many children from minority groups in today's fast-changing multicultural societies. Culturo-metrics is a new area of research that teachers and researchers can use to measure cultural identity and to explore culturally preferred behaviors of children and teachers in multicultural classrooms. Multiculturalism has made ethnicity, as a nominal category, an unreliable indicator of cultural identity and culturally determined behaviors. This is because ethnic groups within multicultural societies influence each other's identities and culturally determined behaviors. This finding has emerged from a 4-year comparative ethnographic study of English teaching practices between Fiji's two main ethnic groups, the indigenous Fijians and the Indo-Fijians. For example, children and teachers in one cultural group borrow more effective behaviors from other cultural groups. One's cultural identity then becomes a composite identity evidencing the cultural influences from society's other cultural groups. This composite cultural identity is measured by the more sensitive Cultural Index (CI). The CI was first used to determine composite cultural identities of English teachers in Fiji and to assess the degree of cultural borrowing between native Fijian teachers and Indo-Fijian teachers to explain and predict their culturally defined teaching behaviors. (Author)

Introduction to Culturo-Metrics: Measuring the Cultural Identity of Children and Teachers

Beatrice Boufoy-Bastick

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**INTRODUCTION TO CULTURO-METRICS:
MEASURING THE CULTURAL IDENTITY OF CHILDREN AND TEACHERS**

*Béatrice Boufof-Bastick
University of Technology
Kingston, Jamaica*

Abstract (177 words)

The attainment of a cultural identity is a major challenge of social development for many children from minority groups in today's fast changing multicultural societies. Culturo-metrics is a new area of research that teachers and researchers can use to measure cultural identity and to explore culturally preferred behaviours of children and teachers in multicultural classrooms.

Multiculturalism has made ethnicity, as a nominal category, an unreliable indicator of cultural identity and culturally determined behaviours. This is because ethnic groups within multicultural societies influence each other's identities and culturally determined behaviours. For example, children and teachers in one cultural group borrow more effective behaviours from other cultural groups. One's cultural identity then becomes a composite identity evidencing the cultural influences from society's other cultural groups. This composite cultural identity is measured by the more sensitive Cultural Index (CI). The CI was first used to determine composite cultural identities of English teachers in Fiji and to assess the degree of cultural borrowing between native Fijian teachers and Indo-Fijian teachers in order to explain and predict their culturally defined teaching behaviours.

Summary (686 words)

Culturo-metrics is a new area of research that uses measures of cultural identity to explore culturally preferred behaviours in today's fast changing multicultural societies. Although the ideas and instruments of Culturo-metrics are derived from educational anthropology, it considers culture in the wider sense. Hence, its measurement techniques are applicable to the wider study of pre-determined groups, socially determined groups and self-selected groups, as well as to the study of identity and culturally determined behaviour in the original cultural-anthropological sense of inter-ethnic influences on cultural identities in multicultural societies.

Standard measures of cultural identity based on language, religion and rituals are unwieldy and not too useful for cultural comparisons because they are often instruments targeted to specific cultural groups. In addition, multiculturalism has made ethnicity, as a nominal category, an unreliable indicator of cultural identity and culturally determined

behaviours. This is because ethnic groups within multicultural societies influence each other's identities and culturally determined behaviours, e.g. by borrowing more effective behaviours from other cultural groups. This finding has emerged from a four-year comparative ethnographic study of English teaching practices between Fiji's two main ethnic groups, the indigenous Fijians and the Indo-Fijians. The ethnography revealed that ethnicity was not the sole predictor of teaching behaviours and that English teachers borrowed selected teaching behaviours from each other's culture. This cultural borrowing was associated with urban ethnic mixing, mixed marriages and, to varying degrees, a common leaning towards westernised pedagogical practices. In such contexts ethnicity is an inadequate marker of resulting composite cultural identities. It is inter-ethnic blending such as this within modern multicultural societies that has made ethnicity an unsuitable predictor of culturally defined behaviours, such as preferred teaching behaviours. To measure this composite cultural identity a more sensitive Cultural Index (CI) has been developed.

This paper presents the Cultural Index; an efficient instrument to measure and compare composite cultural identities. The CI, which is an example of a grounded index, offers more statistical options than nominal scales, which rigidly categorise respondents into population sub-groups, such as Fijian or Indian ethnic groups. In addition, a subject's CI can be assessed for each ethnic influence on their cultural identity. The subject's cultural identity is then represented by the profile of their contributing CIs. A respondent's cultural identity profile is derived by calculating his or her constituent primary cultural indices (PCIs), such as his/her Fijian CI, his/her Indian CI and his/her western CI. These PCIs are calculated by asking the respondent to rate his or her cultural allegiance to one of the society's cultural groups (Q1) (e.g. one of the ethnic groups) and then to rate an appropriate given public object on the same attribute (Q2). To a first approximation, these ratings are converted to an ipsative scale by dividing the self-rating by the rating of the public object (Q1/Q2). This scale is then grounded to any category of the population by multiplying by the average of Q2 for that category. This results in a measure of an individual's Primary Cultural Index (PCI). PCIs can be calculated for each cultural sub-group influence. Together they represent an individual's cultural identity profile. The sum of the PCIs is the individual's Total Cultural Index (TCI). Each PCI can be written as a proportion of TCI and the resulting relative indices (RCI) can be used to predict culturally defined behaviours. The Cultural Index was quantitatively tested for reliability and validity in Fiji.

The Cultural Index is an instrument, which can be used to predict culturally preferred behaviours, such as teaching behaviours, in ethnically and socially diverse societies. CI has significant applications not only for pre-determined groups such as Fijian and Indian ethnic groups, but also for socially-determined groups, such as school drop-outs, unmarried mothers, drug addicts and also self-selected groups such as purchasers of a brand product, such as McIntosh vs. IBM or McDonalds vs. KFC.

The theoretical significance of culturo-metrics, with instruments and concepts such as PCI, TCI, RCI, Measurement of cultural identity and presentations of profiles of cultural

identity that acknowledge the wide meaning of culture, is that it makes more discriminating research techniques available to education and other fields of social study.

Paper: Introduction to Culturo-metrics: Cultural identity and the Cultural index

Culturo-metrics is a new area of research that uses measures of cultural identity to explore culturally preferred behaviours in today's fast changing multicultural societies. Although the ideas and instruments of Culturo-metrics are derived from educational anthropology, it considers culture in the wider sense. Hence, its measurement techniques are applicable to the wider study of pre-determined groups, socially determined groups and self-selected groups, as well as to the study of identity and culturally determined behaviour in the original cultural-anthropological sense of inter-ethnic influences on cultural identities in multicultural societies.

This paper shows how culturo-metrics is used to delineate cultural profiles of social and ethnic groups within multicultural societies. In particular, it explains how culturo-metrics can be used by teachers and researchers to explore culturally preferred behaviours of teachers and children in the classroom.

Rationale for culturo-metrics and the Cultural Index

Standard measures of cultural identity based on language, religion and rituals are unwieldy and not too useful for cultural comparisons because they are often instruments targeted to specific cultural groups (Hastings, 2000; Howard Ross, 2001). In addition, multiculturalism has made ethnicity, as a nominal category, an unreliable indicator of cultural identity and culturally determined behaviours. This is because ethnic groups within multicultural societies influence each other's identities and culturally determined behaviours, e.g. by borrowing more effective behaviours from other cultural groups. This finding has emerged from a four-year comparative ethnographic study of English teaching practices of Fiji's two main ethnic groups, the indigenous Fijians and the Indo-Fijians. The ethnography revealed that ethnicity was not the sole predictor of teaching behaviours and that English teachers borrowed selected teaching behaviours from each other's culture. This cultural borrowing was associated with urban ethnic mixing, mixed marriages and, to varying degrees, a common leaning towards philosophically westernised pedagogical practices (Wilson, 1982). In such culturally mixed contexts, ethnicity is an inadequate marker of resulting composite cultural identities. It is inter-ethnic blending such as this within modern multicultural societies that has made ethnicity an unsuitable predictor of culturally defined teaching behaviours. To measure this composite cultural identity inherent to modern culturally mixed societies, a more sensitive Cultural Index (CI) has been developed for culturo-metrics. The concept and measure of Cultural Index, which emerged from a four-year ethnographic study in Fiji, has been quantitatively tested for reliability and validity.

CI is a statistically flexible instrument

The Cultural Index is an efficient instrument developed to measure and compare composite cultural identities in multicultural societies. Culturo-metrics acknowledges that cultural identity differs from ethnicity and that ethnicity is not the sole determinant of culturally determined behaviours. Culturo-metrics rather considers a society's ethnic make-up, e.g. French, German and Italian in Switzerland, and assesses an individual's CI for each ethnic influence on his/her cultural identity, that is culturo-metrics does not

rigidly categorise an individual into a population sub-group, such as being part of a French, German or Italian Swiss ethnic group. In contrast, culturo-metrics would assess a Swiss individual's cultural identity by evaluating the different cultural influences on his or her composite cultural identity, which would then be represented by the profile of his or her contributing CIs. An individual's composite cultural identity profile is hence derived by calculating his or her constituent Primary Cultural Indices (PCIs), such as his/her French CI, his/her German CI and his/her Italian CI. These PCIs are calculated by asking the individual (i) to rate his or her cultural allegiance to one of the society's cultural groups (Q1), e.g. one of the ethnic groups, and (ii) to rate an appropriate given public object on the same attribute (Q2). To a first approximation, these ratings are converted to an ipsative scale by dividing the self-rating by the rating of the public object (Q1/Q2). This scale is then grounded to any category of the population by multiplying by the average of Q2 for that category. This results in a measure of an individual's Primary Cultural Index (PCI) for the allegiance group. It is repeated for other independent allegiance groups of interest and influence.

CI is a grounded statistical instrument

The CI uses Likert scale type responses. It requires 2 questions Q1 and Q2. Q1 asks a respondent to rate a cultural attribute of him/herself and Q2 asks for a rating of the same cultural attribute of a public object. The public object is appropriately chosen so that the respondent and the grounding subgroup are aware of the object's cultural attribute to be rated. This is why it is referred to as a 'public object'. An example of Q1 and Q2 for assessing the French component of Swiss cultural identity would be: 'How French are you?' and 'How French is Jean-Pascal Delamuraz?' where Jean-Pascal Delamuraz is the public object to which an individual's rating can be compared by dividing Q1 by Q2 to convert Q1 to an ipsative measure. By dividing the first answer by the second, it cancels out, to a first-degree approximation, the idiosyncratic values with which the respondent assesses the attribute. Then the respondent's ipsative measure can be grounded in any sub-group values by multiplying his or her Q1/Q2 result by the mean rating of Q2 for that sub-group. This is an example of a Primary Cultural Index.

In this example, the French Primary Cultural Index for Swiss cultural identity (PCI-F) is given by:

$$\text{PCI-F} = [\text{Q1 (the self-rating)} / \text{Q2 (the public object)}] \times [\text{mean of Q2 (for some sub-group)}]$$

This is the calculation of a Primary Cultural Index (PCI) for an individual, which is grounded in the mean value of the whole population or in the mean value for a chosen sub-group. The PCI shows how imbued a respondent is with this aspect of his or her culture, such as how French Swiss he/she is - PCI-F is a measure of the French component of his or her Swiss cultural identity according to the values of the chosen population or sub-group, that is, 'through their eyes, or 'from their perspective' i.e. relative to the mean value of the grounding sub-group.

CI measures the cultural components of an individual's cultural identity

Cultural identity consists of more than one Primary Cultural Index in pluri-cultural and pluri-lingual countries (Caldas, & Caron-Caldas, p.1999), such as Switzerland. For example, a French Swiss is likely to have borrowed cultural behaviours from other linguistically distinct social groups of this society, such as from German or Italian social groups. His or her PCIs for German (PCI-G) and Italian (PCI-I) can be calculated in the same way as PCI-F, that is by asking the relevant Q1 and Q2 and grounding each division in the same population or sub-group values by multiplying the quotient by the relevant mean Q2 representing the mean of the values of that population of sub-group. The individual PCIs form a profile of a respondent's Cultural Identity and the total of the respondent's PCIs - that is PCI-F + PCI-G + PCI-I - is his/her Total Cultural Index (TCI) which is an additive measure of the respondent's cultural identity.

$$TCI = PCI-F + PCI-G + PCI-I$$

Choosing a public object to determine the grounded PCI

It can be noted, for reasons of validity and practical effectiveness, that one's Primary Cultural Index should be the same, no matter which public object is chosen as a vehicle for its calculation, providing the public object has a reasonable amount of the cultural attributes to evaluate and both the respondent and the sub-group are more-or-less equally aware of these attributes. My research has shown that the CI is rigorous even using public objects, which have significantly different mean ratings of the same cultural attribute. So in this example, you could use Jean-Pascal Delamuraz as the same public object for each cultural rating, e.g. Q2F "How French is Jean-Pascal Delamuraz ", Q2G "German is Jean-Pascal Delamuraz ", Q2I "How Italian is Jean-Pascal Delamuraz", or one may choose different public objects for Q2F, Q2G and Q2I. In practice, it seems more effective to use the same public object so that the respondent can also use comparative evaluations from within one evoked mental set to give more reliable ratings.

Calculating TCI to represent cultural identity

PCIs can be calculated for each cultural sub-group influence, e.g. French, German and Italian in Swiss identity. Together, these PCIs represent an individual's cultural identity profile. The sum of the PCIs is the individual's Total Cultural Index (TCI). Each PCI can be written as a proportion of TCI and the resulting relative indices (RCI) can be used to predict culturally defined behaviours.

Assessing Relative Cultural Identity

TCI represents how totally cultured the respondent is, as derived from summing the component PCIs. Each of the PCIs indicates how much the respondent is imbued with each corresponding culture. If one PCI is relatively much stronger than the others are, then the cultural influence it measures can be expected to be expressed in behaviours determined more by that larger cultural influence. PCIs can be compared to assess the strength of any one PCIs relative to others that is to assess if a respondent has a relatively stronger French PCI, German or Italian PCI. For this, each PCI is assessed as a proportion of the respondent's TCI. That is, each PCI is written as a fraction of the TCI such as: PCI-F /TCI, PCI-G /TCI, and PCI-I /TCI. Each fraction represents an individual's Relative Cultural Index (RCI) for that particular cultural component. This is

simply a proportion of his or her total cultural allegiance. Each RCI indicates the relative strength of the individual's allegiance its related culture, and hence the probability (all else being equal) that he or she will choose a behaviour determined by that culture.

$$\text{RCI-F} = \text{PCI-F}/\text{TCI}$$

$$\text{RCI-G} = \text{PCI-G}/\text{TCI}$$

$$\text{RCI-I} = \text{PCI-I}/\text{TCI}$$

Using the Cultural Index to predict culturally preferred classroom behaviours

The three PCIs can give a profile a Swiss teacher or student's cultural identity and the total TCI can give a measure of how enculturated a Swiss teacher or student is in terms of these three components of French-ness (PCI-F), German-ness (PCI-G) and Italian-ness (PCI-I).

$$\text{TCI} = \text{PCI-F} + \text{PCI-G} + \text{PCI-I}$$

The probability with which a teacher or a student would act, in an evenly balanced context, in accordance with one of the cultures to which he or she adheres, could be assessed by calculating his or her Relative Cultural Indices (RCIs), each of which represents a proportion of his or her TCI (e.g., $\text{RCI-F} = \text{PCI-F} / \text{TCI}$). Then, the RCIs can be compared to assess the strength of each of the three Swiss cultures in predicting culturally determined behaviours in Swiss classrooms.

Conclusion and summary

The Cultural Index is a measure of cultural identity, which differs from ethnic, social or linguistic grouping. It has been developed for predicting culturally determined behaviours in multi-cultural contexts. It takes into account cultural influences from other cultural groups, which are present in multicultural and multilingual societies, such as Switzerland. Using ethnicity, social or linguistic grouping as a nominal category provides little sensitivity for predicting culturally preferred behaviours of members living in such culturally mixed societies. The cultural mixing inherent to these societies encourages cultural borrowing that is their members take on, to different extents, cultural behaviours pertaining to the other cultures. The Cultural Index is an instrument, which assesses cultural identity and the strength of each constituent culture influence in predicting culturally determined behaviours in culturally mixed societies.

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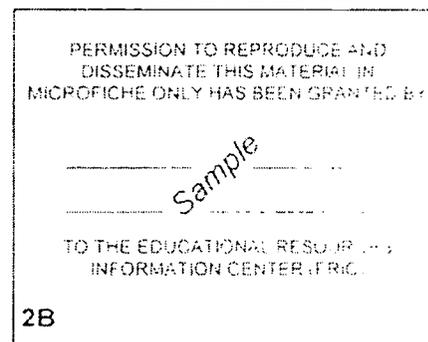
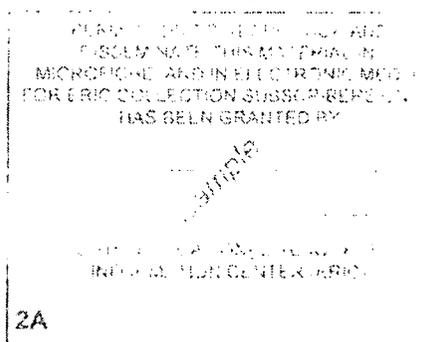
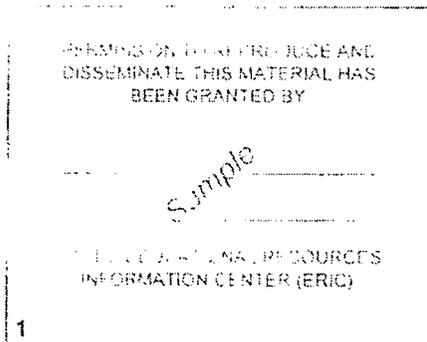
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